



Final Environmental Impact Statement



PROPOSED ~~BARSTOW~~-LAS VEGAS MOTORCYCLE RACE

October 1974

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT



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SUMMARY

Draft () Final (X) Environmental Statement

Department of the Interior, Bureau of Land Management

1. Type of Action: Administrative (X) Legislative ()
2. Brief Description of Action: The proposed action is a point to point motorcycle race approximately 155 miles on existing roads and trails over open desert from near Barstow, California, to Las Vegas, Nevada. Three thousand motorcyclists released in two waves, will race over previously used roads and trails. An estimated 10,000 to 12,000 people will attend as pit crews and spectators.
3. Summary of Environmental Impacts: The proposed action will result in an increment of damage to the soil, vegetation, wildlife habitat, cultural resources, aesthetics, recreation, and air resources within the area of influence, in the amount of 478 acres.
4. Alternatives Considered:
 - A. Rejection of Application (No Action)
 - B. Alternative Routes
 1. Colosseum Gorge
 2. Keaney Pass - Power Line Road
 3. Keaney Pass Road
 - C. Barstow Start Area
 - D. Reducing the Size of the Start Area
 - E. Alternative Finish Area
5. Date Statement Made Available to CEQ and the Public:

Draft Statement: September 13, 1974
Final Statement: OCT 22 1974
6. Comments have been requested from the following. Comments were received from those agencies indicated by an asterisk.

Federal Agencies

Department of Agriculture
Forest Service
Soil Conservation Service*

Department of Interior
Bureau of Outdoor Recreation*
Fish and Wildlife Service
Bureau of Reclamation*
National Park Service
Regional Solicitor

State Agencies

Office of Planning and Research (California State Clearinghouse)
Nevada State Clearinghouse*

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DEPARTMENT OF THE INTERIOR

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FINAL
ENVIRONMENTAL STATEMENT

BARSTOW TO LAS VEGAS

HARE & HOUND

MOTORCYCLE RACE

Prepared by

CALIFORNIA STATE OFFICE, SACRAMENTO, CALIFORNIA
BUREAU OF LAND MANAGEMENT
DEPARTMENT OF THE INTERIOR

Ernst Bertelund.
DIRECTOR

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PROPOSED BARSTOW TO LAS VEGAS

MOTORCYCLE RACE

DRAFT ENVIRONMENTAL IMPACT STATEMENT

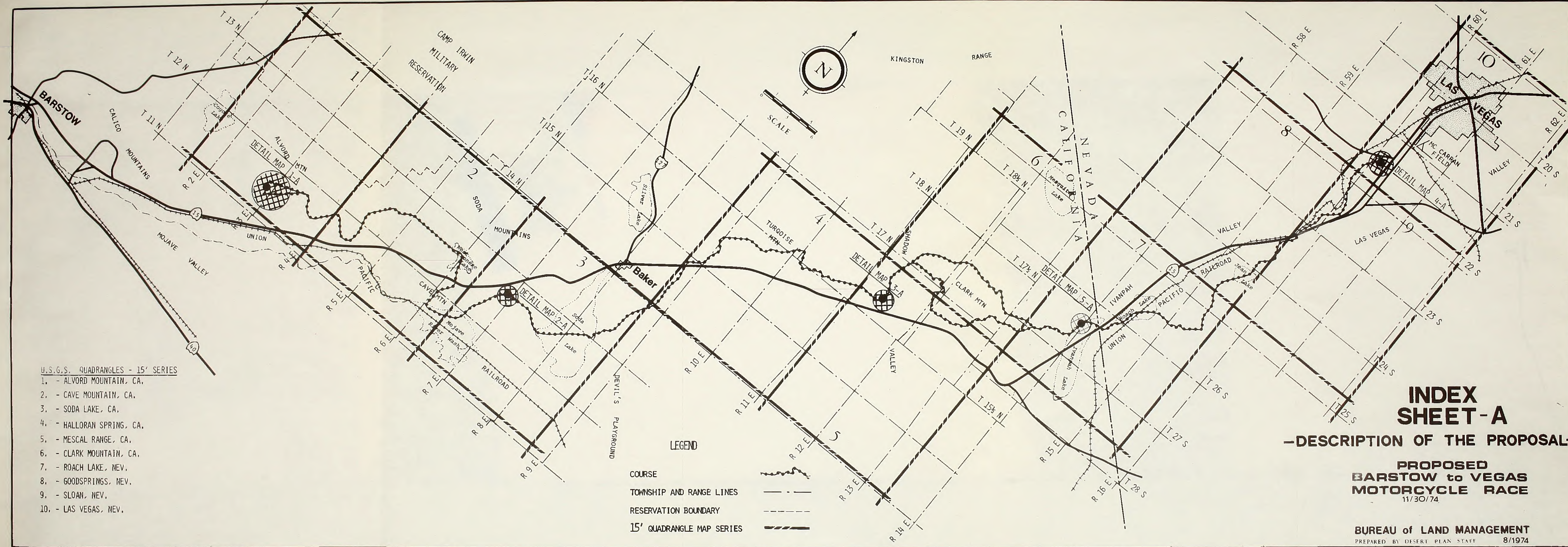
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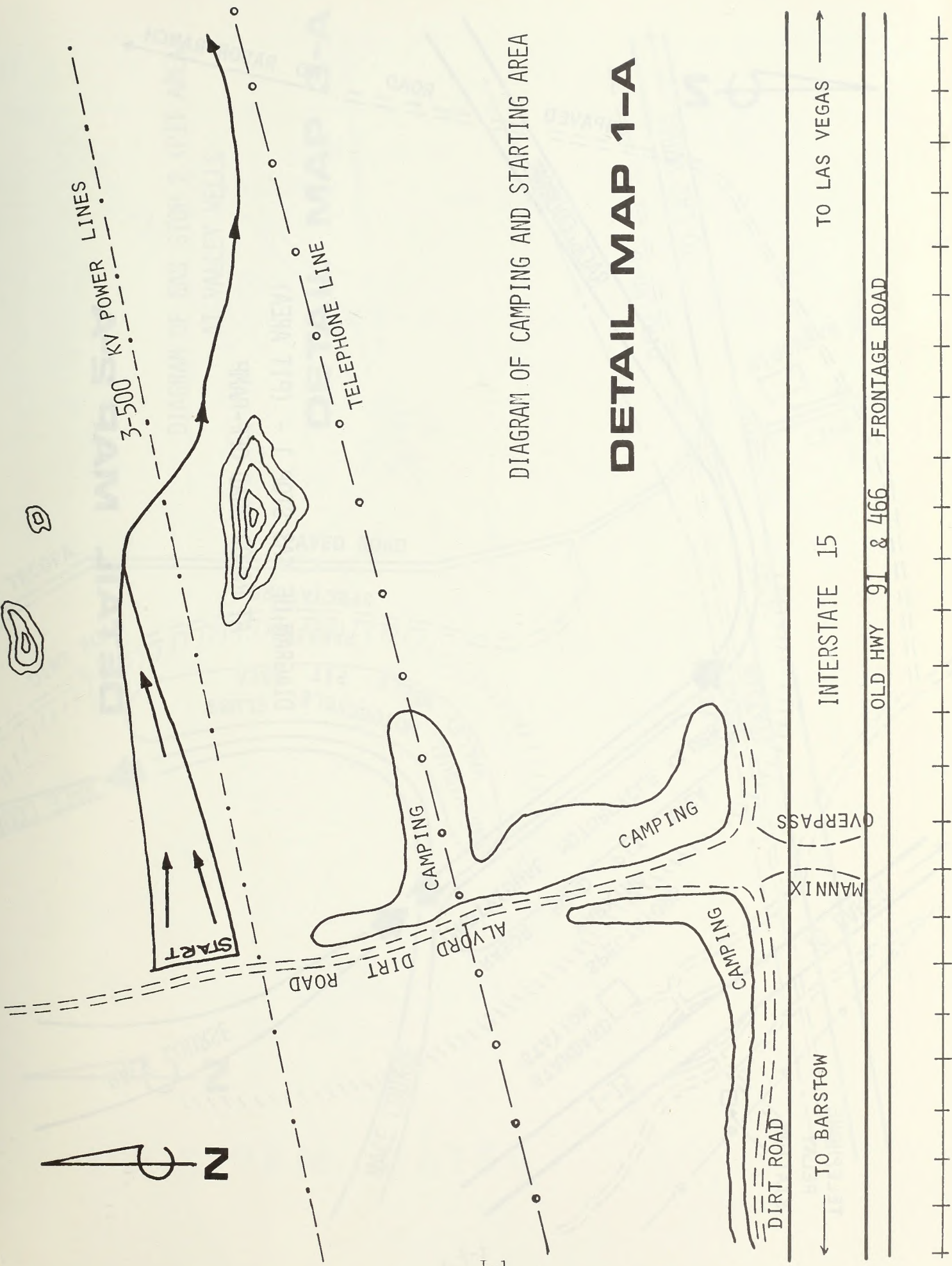


DIAGRAM OF CAMPING AND STARTING AREA

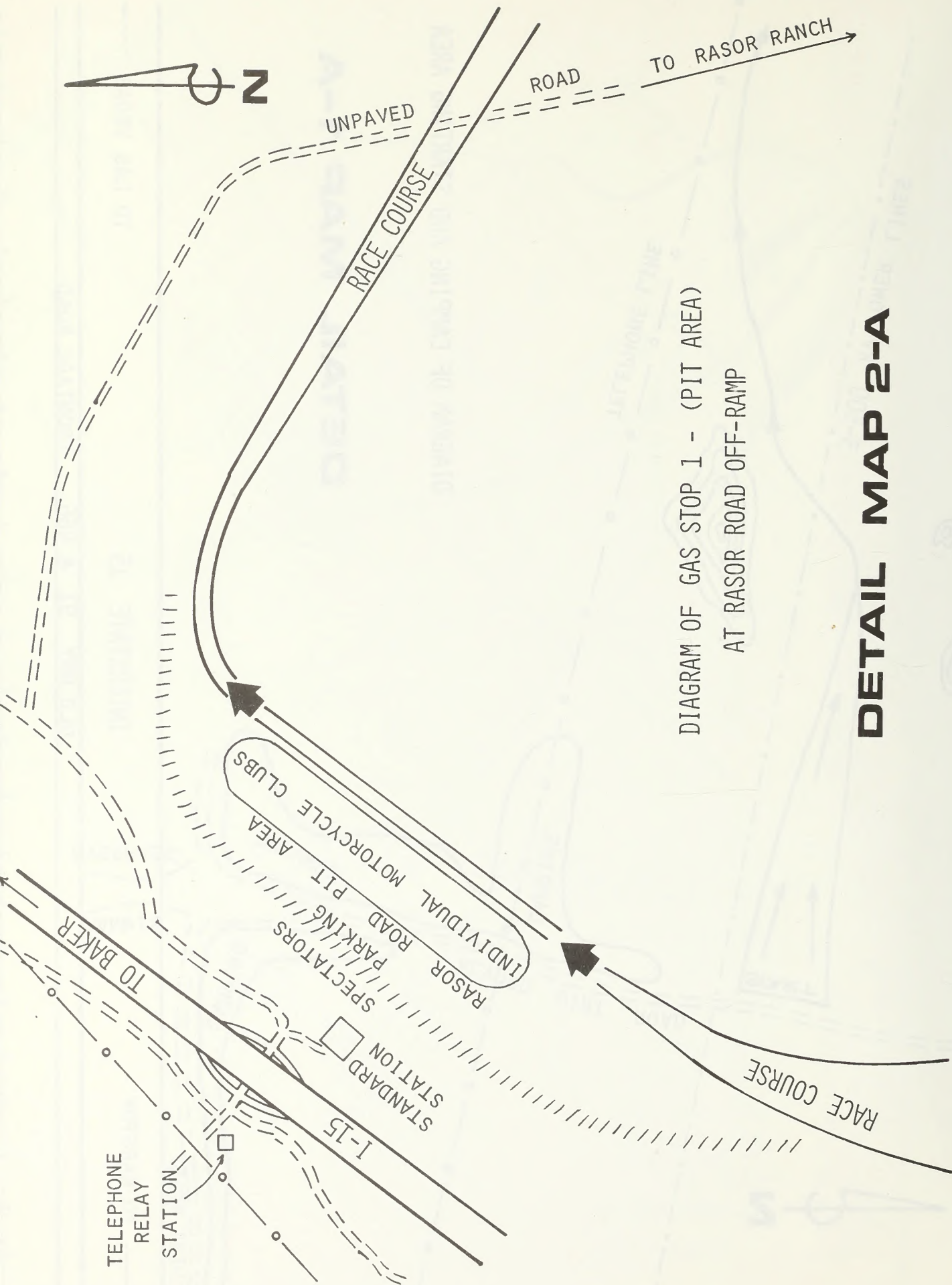
DETAIL MAP 1-A

TO BARSTOW

INTERSTATE 15

TO LAS VEGAS

OLD HWY 91 & 466 FRONTAGE ROAD



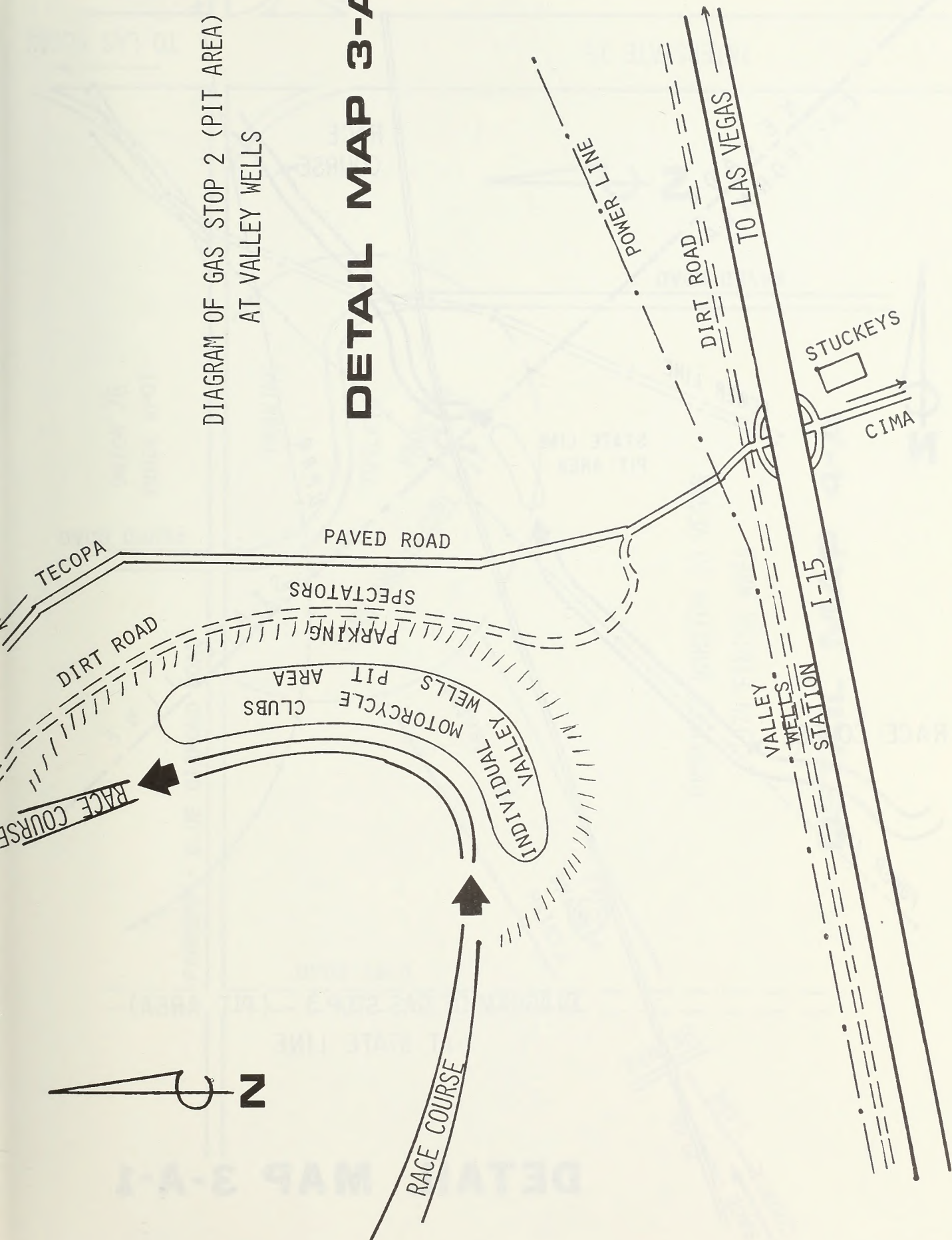
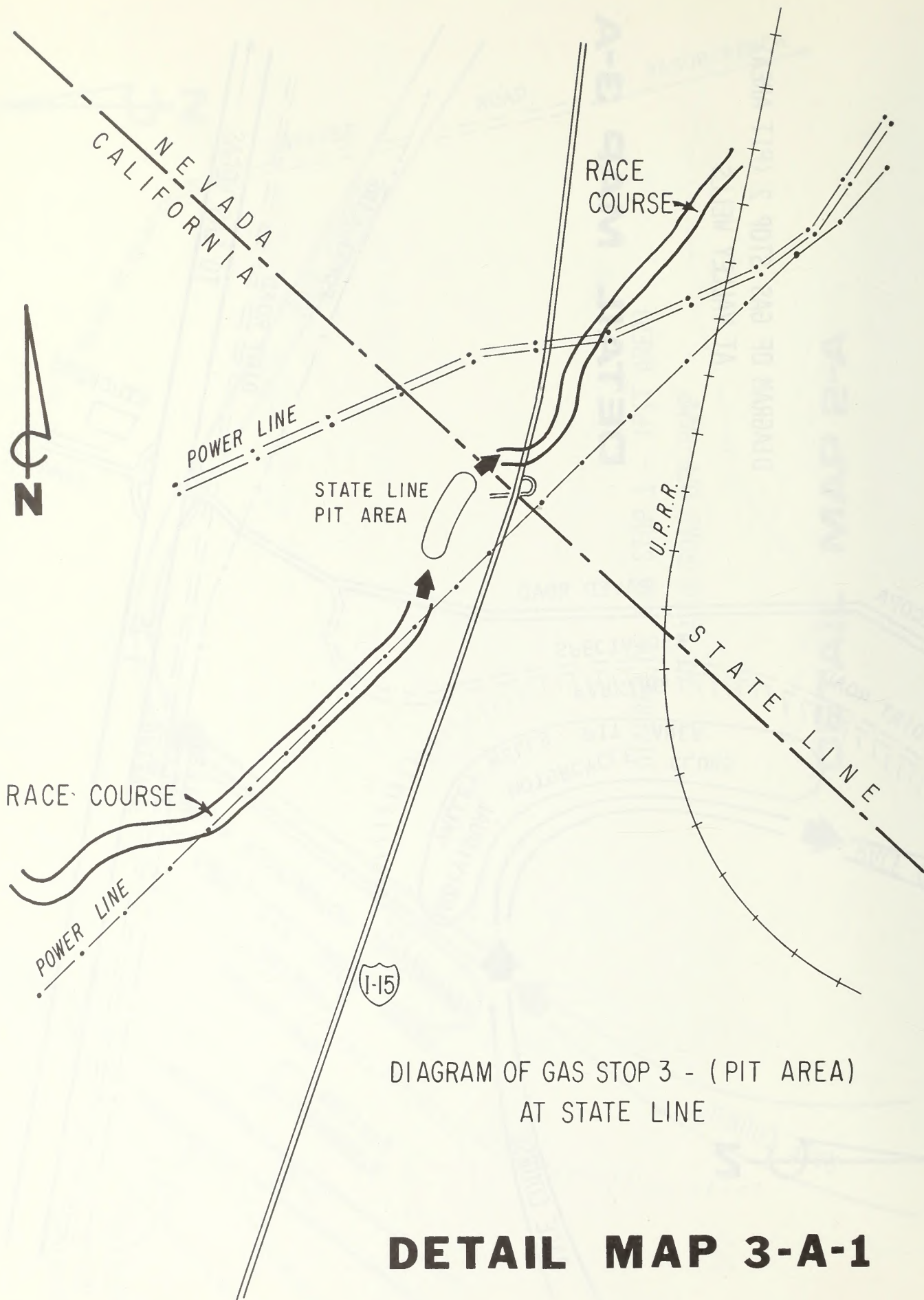
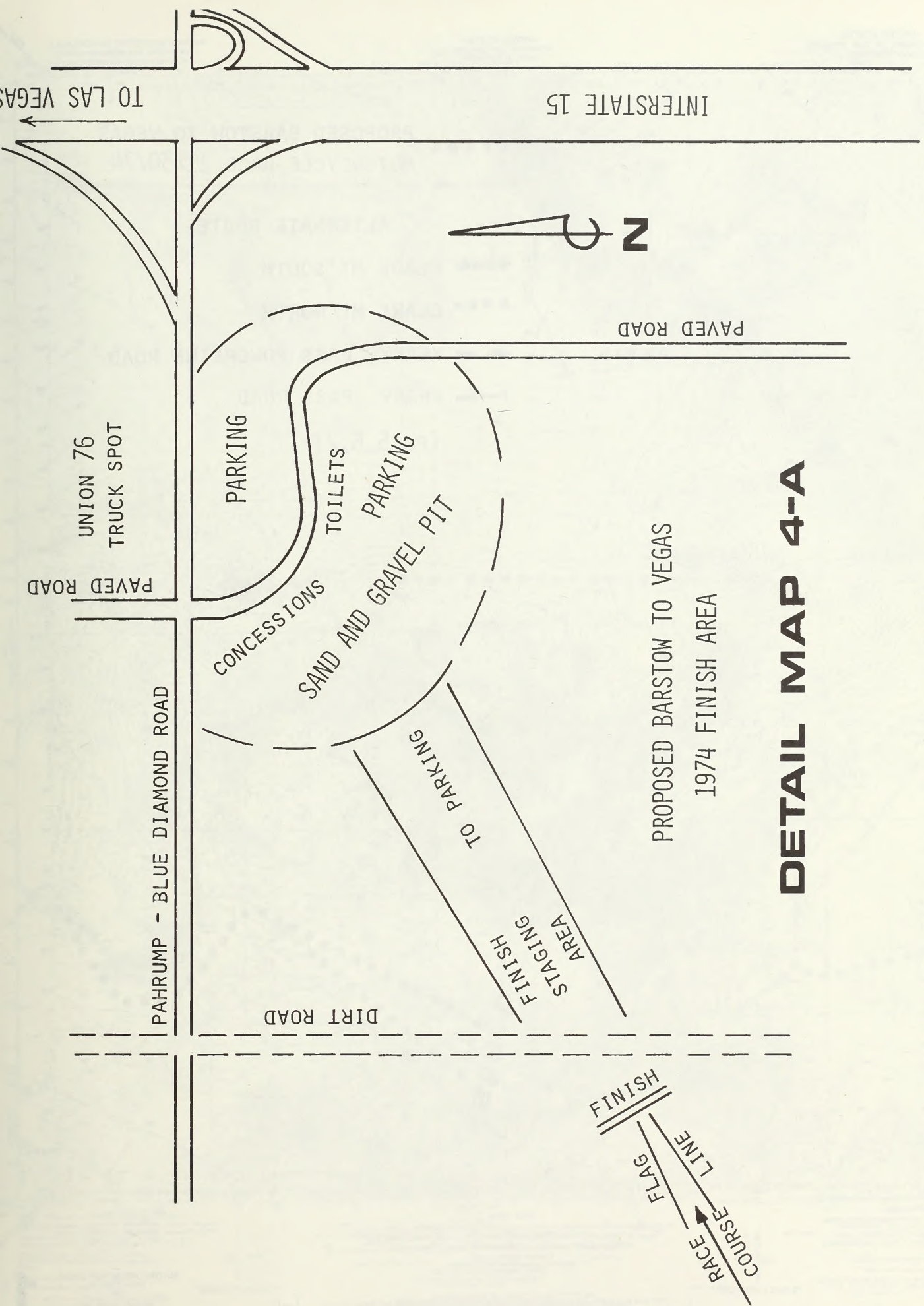


DIAGRAM OF GAS STOP 2 (PIT AREA)
AT VALLEY WELLS

DETAIL MAP 3-A





DETAIL MAP 4-A

PROPOSED BARSTOW TO VEGAS
1974 FINISH AREA

PROPOSED BARSTOW TO VEGAS
MOTORCYCLE RACE 11/30/74

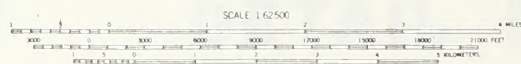
ALTERNATE ROUTES

- CLARK MT SOUTH
- CLARK MT NORTH
- KEANY PASS POWERLINE ROAD
- KEANY PASS ROAD

(pg 5,6,7)

start

Maped, edited, and published by the Geological Survey
Control by USGCS and USGS
Topography from aerial photographs by multiplex methods
Aerial photographs taken 1948. Field check 1948
Polyconic projection. 1927 North American datum
10,000 foot grid based on California coordinate system,
zone 5
Dashed land lines indicate approximate location
Unchecked elevations are shown in brown
1000-meter Universal Transverse Mercator grid ticks
zone 11, shown in blue

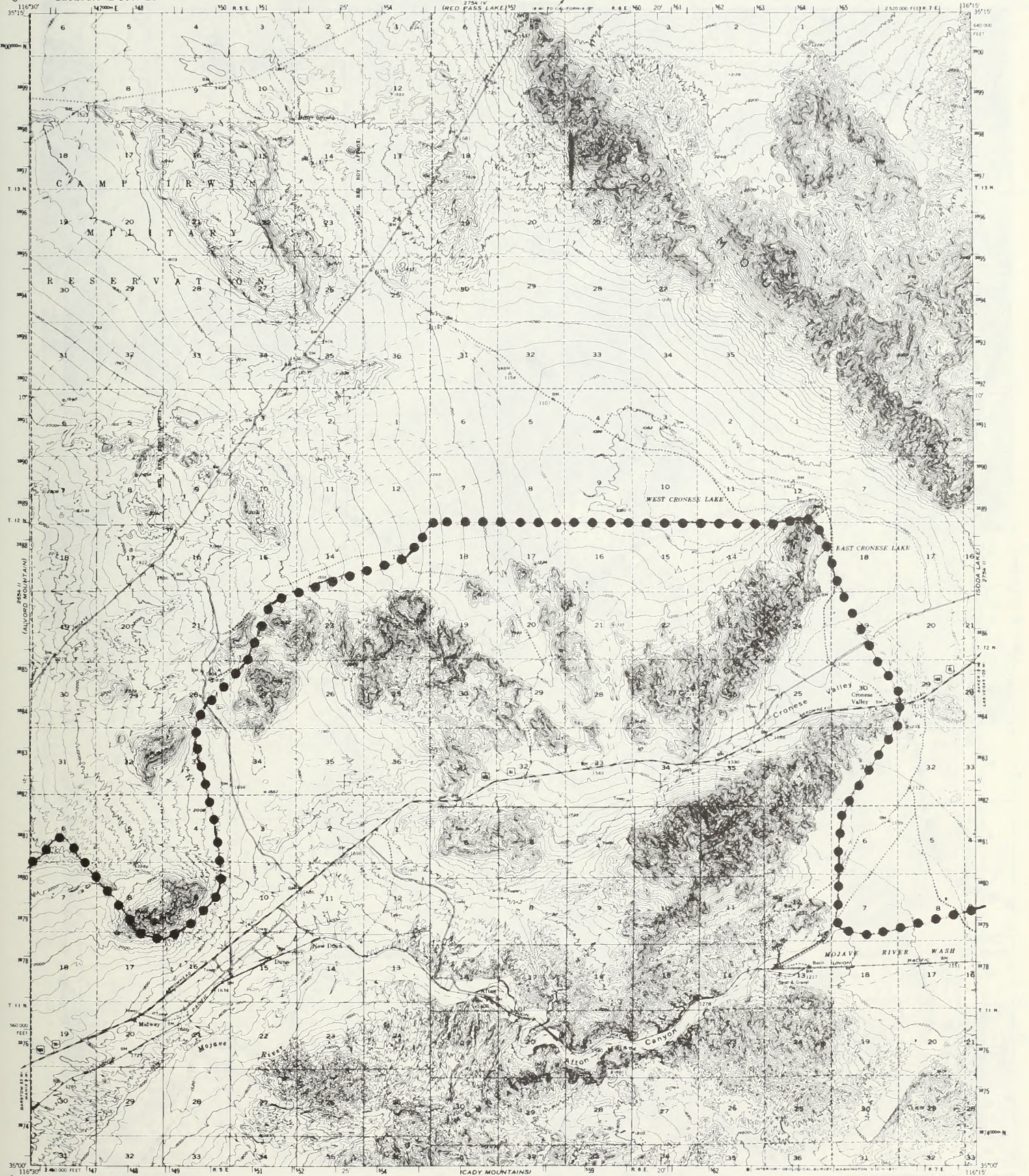


CONTOUR INTERVAL 40 FEET
DASHED LINES REPRESENT HALF-INTERVAL CONTOURS
DATUM IS MEAN SEA LEVEL

ROAD CLASSIFICATION
Heavy-duty ——— Light-duty ———
Medium-duty ——— Unimproved dirt ———
□ U. S. Route ○ State Route

ALVORD MOUNTAIN, CALIF.
N 1500-W 11630/15
1948
AMS 2654 II-SERIES V795

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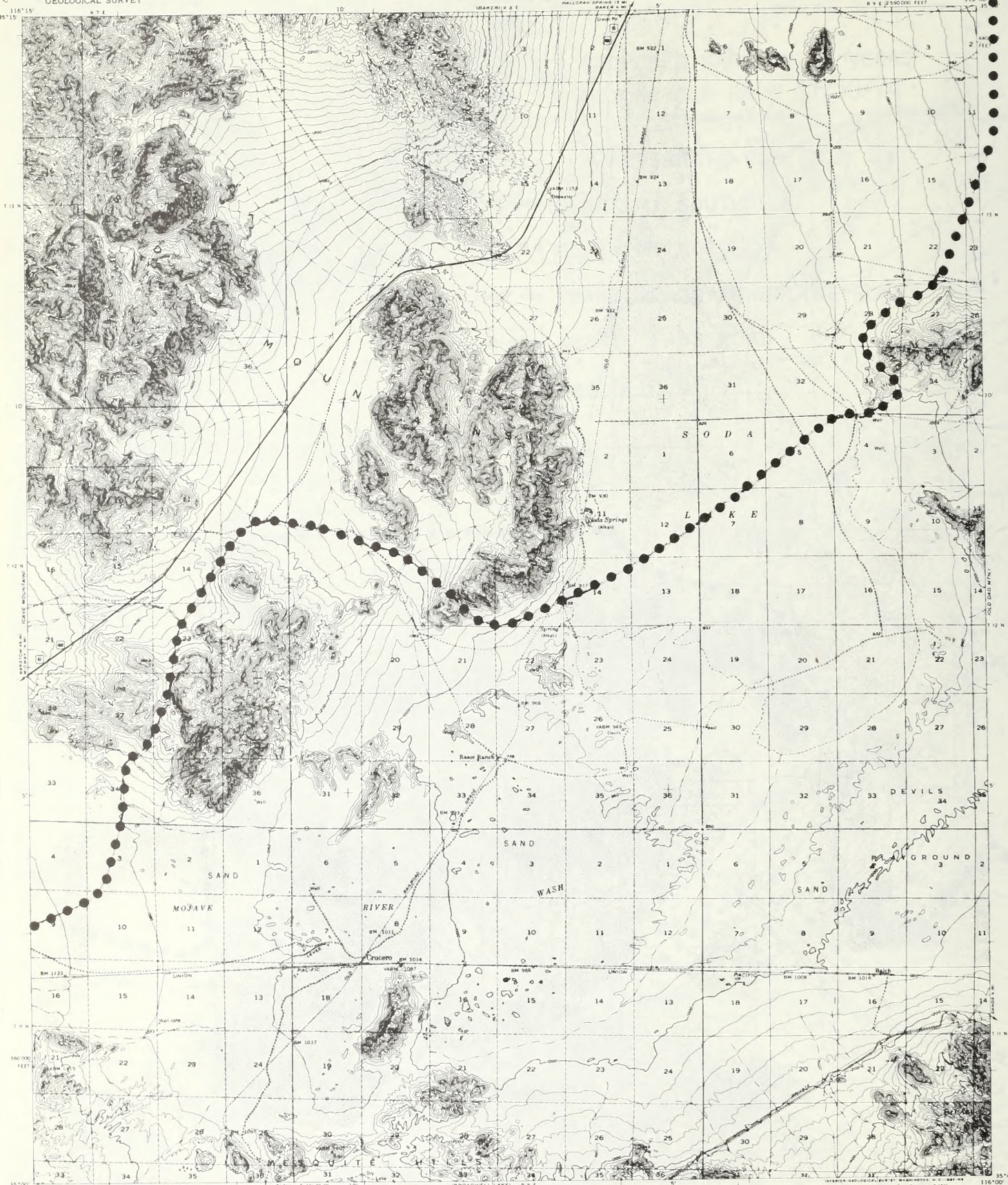
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Topography from aerial photographs by multiple methods
Aerial photographs taken 1946. Field check 1948
Polyconic projection - 1927 North American datum
10,000 foot grid based on California coordinate system,
zone 5
Dashed land lines indicate approximate location
Unchecked elevations are shown in brown
1000-meter Universal Transverse Mercator grid ticks,
zone 11, shown in blue

SCALE 1:62,500
CONTOUR INTERVAL 40 FEET
DASHED LINES REPRESENT HALF-INTERVAL CONTOURS
DATUM IS MEAN SEA LEVEL

ROAD CLASSIFICATION
Medium-duty
Light-duty
Unimproved dirt
U.S. Route

CAVE MOUNTAIN, CALIF
N 3500-W 11615/15
1948
AMS 2754 III-SERIES V95

I-7



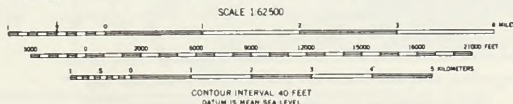
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Topography from aerial photographs by multiplex methods
and by planimeter surveys 1956. Aerial photographs taken 1953
Polyconic projection. 1927 North American datum.
10,000-foot grid based on California coordinate system, zone 5
Dashed land lines indicate approximate locations

SCALE 1:62,500
CONTOUR INTERVAL 40 FEET
DASHED LINES REPRESENT 20-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

ROAD CLASSIFICATION
Heavy duty ——— Light duty ———
Unimproved dirt ———
U.S. Route

QUADRANGLE LOCATION

SODA LAKE, CALIF.
N 3500'—W 11600' 15
1956

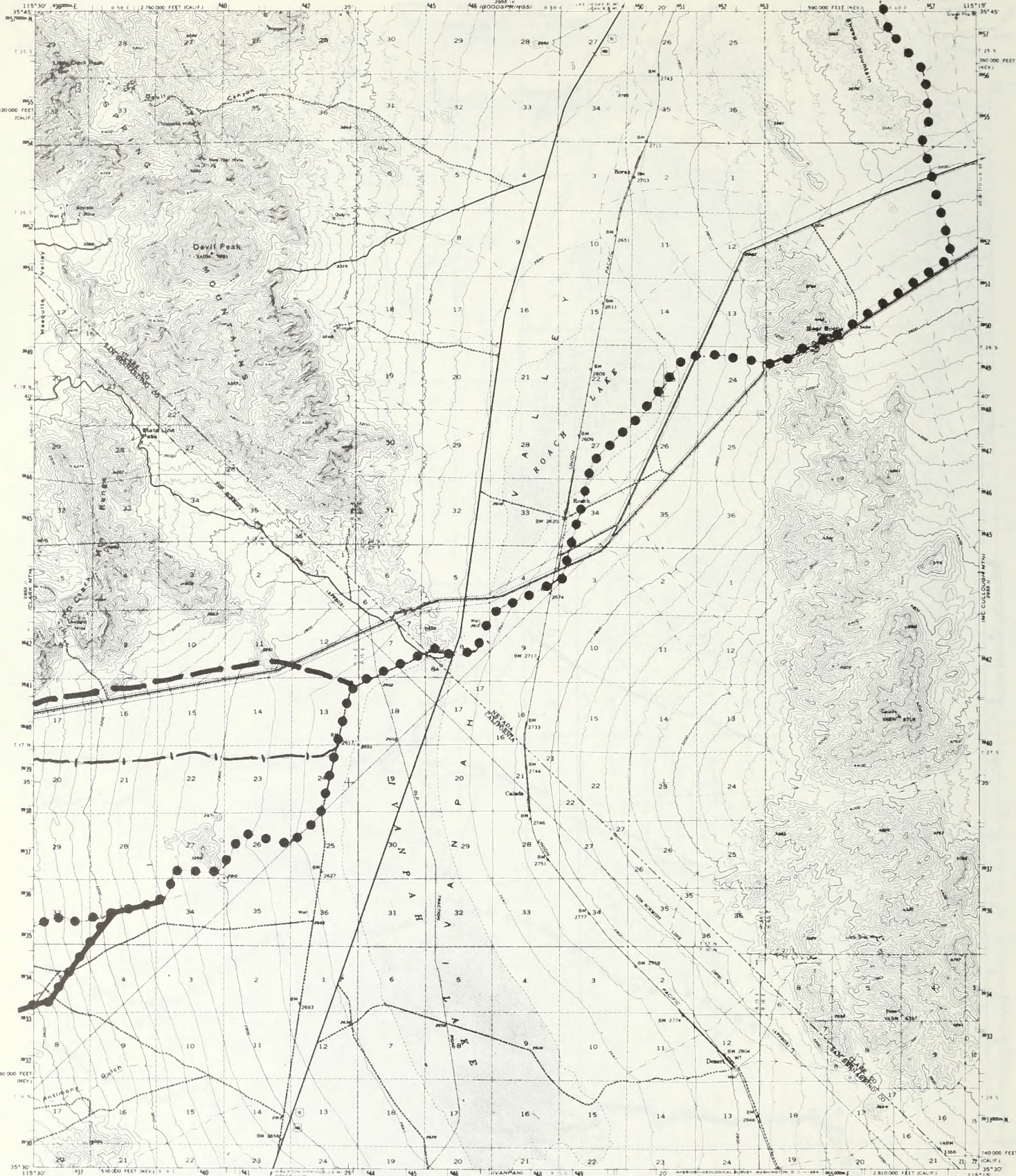


I-9

1936







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Topography from aerial photographs by multiplex methods

Aerial photographs taken 1954. Advance field check 1955

Polyconic projection. 1927 North American datum

10,000-foot grid based on Nevada coordinate system, east zone

and California coordinate system, zone 5

Dashed lines indicate approximate locations

Unchecked elevations are shown in brown

1,000-foot Universal Transverse Mercator grid ticks

zone 11 shown in blue



SCALE 1:62,500

CONTOUR INTERVAL 80 FEET

(DATUM IS MEAN SEA LEVEL)

QUADRANGLE LOCATION

ROAD CLASSIFICATION

Heavy-duty

Light-duty

Unimproved dirt

U.S. Route

ROACH LAKE, NEV.-CALIF.

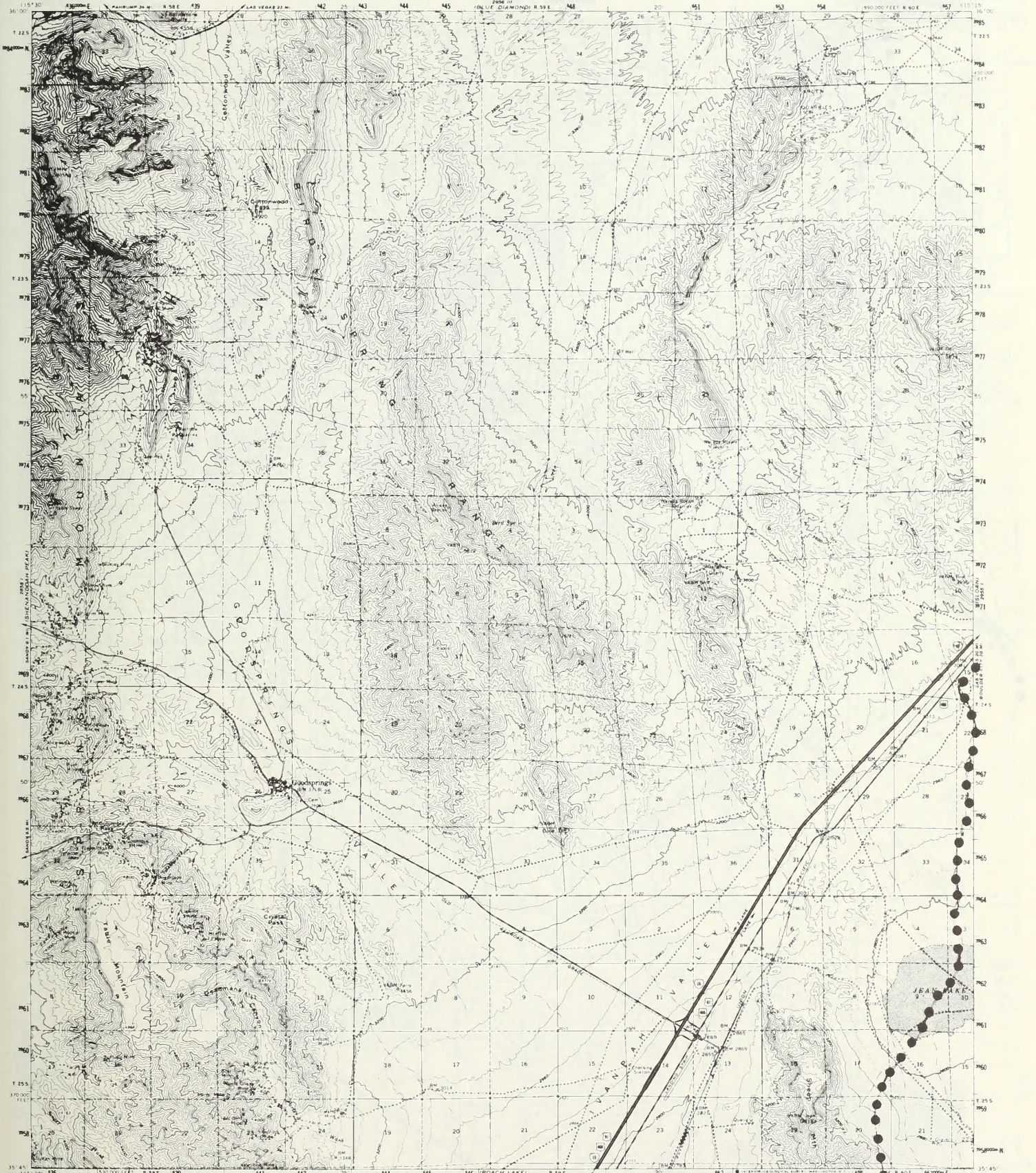
N 3330-W 11515/15

1955

AMS 2955 III-SERIES V 796

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I-12



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Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1958 Field check 1960
Photographic projection 1927 No. 18 American datum
10,000 foot grid based on Nevada coordinate system, east zone
1000 meter Universal Transverse Mercator grid (T.C.S. zone 11, shown in blue)
Dashed land lines indicate approximate locations

UTM GRID AND 1960 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

SCALE 1:62,500
CONTOUR INTERVAL 80 FEET
DOTTED LINES REPRESENT 80-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

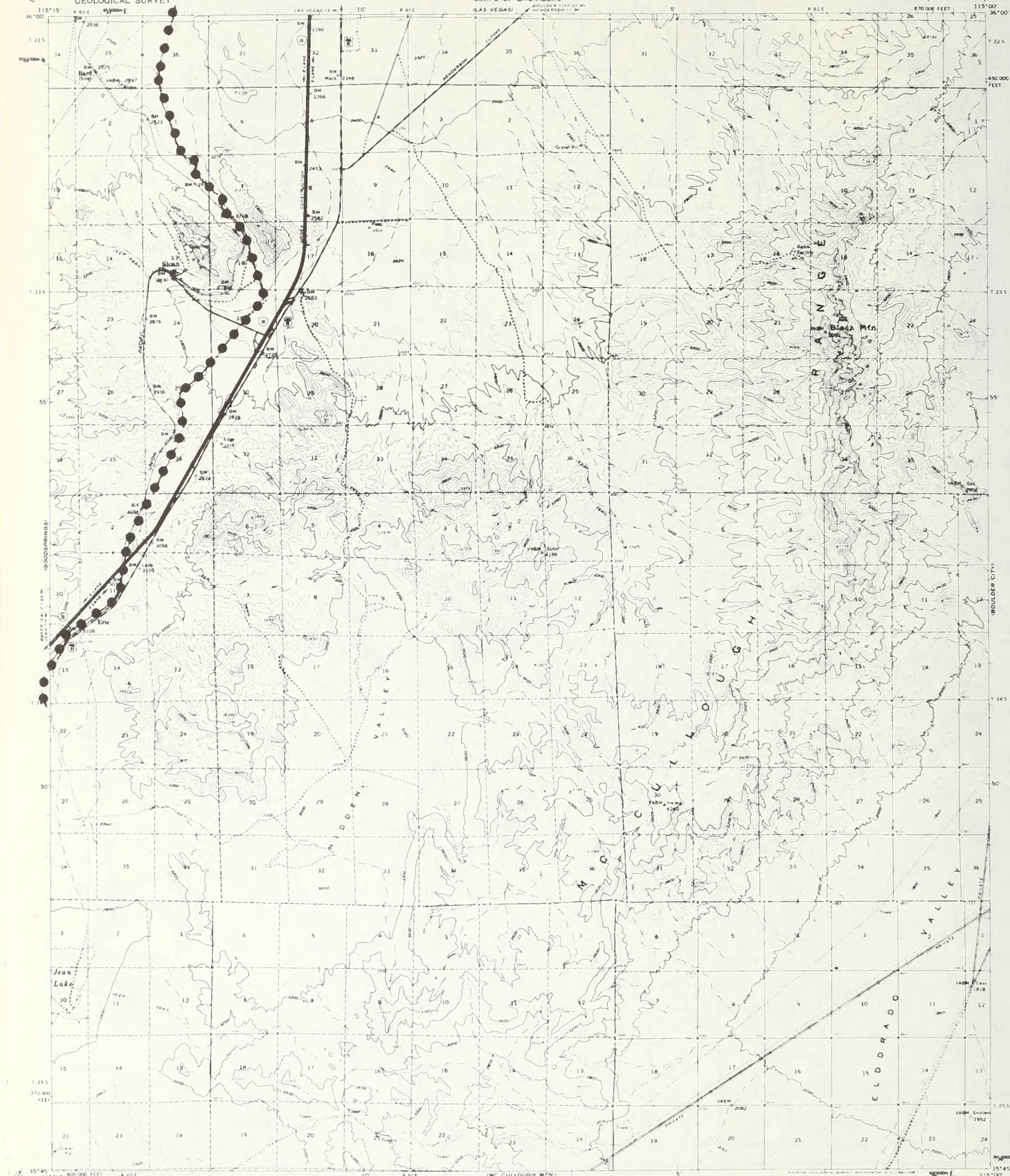
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ROAD CLASSIFICATION
Heavy duty ——— Light duty ———
Medium duty ——— Unimproved dirt ———
Interstate Route ——— U.S. Route ———

GOODSPRINGS, NEV.
N3545-W151515
1960
AMS 2955 IV-EMSY V796

I-13

8



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Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1958 Field check 1960
Polyconic projection 1927 North American datum
10,000 foot grid based on Nevada coordinate system, east zone
1000 meter Universal Transverse Mercator grid ticks,
zone 11, shown in blue
Dashed land lines indicate approximate locations

SCALE 1:62,500
CONTOUR INTERVAL 80 FEET
DOTTED LINES REPRESENT 40 FOOT CONTOURS
(DATUM IS MEAN SEA LEVEL)

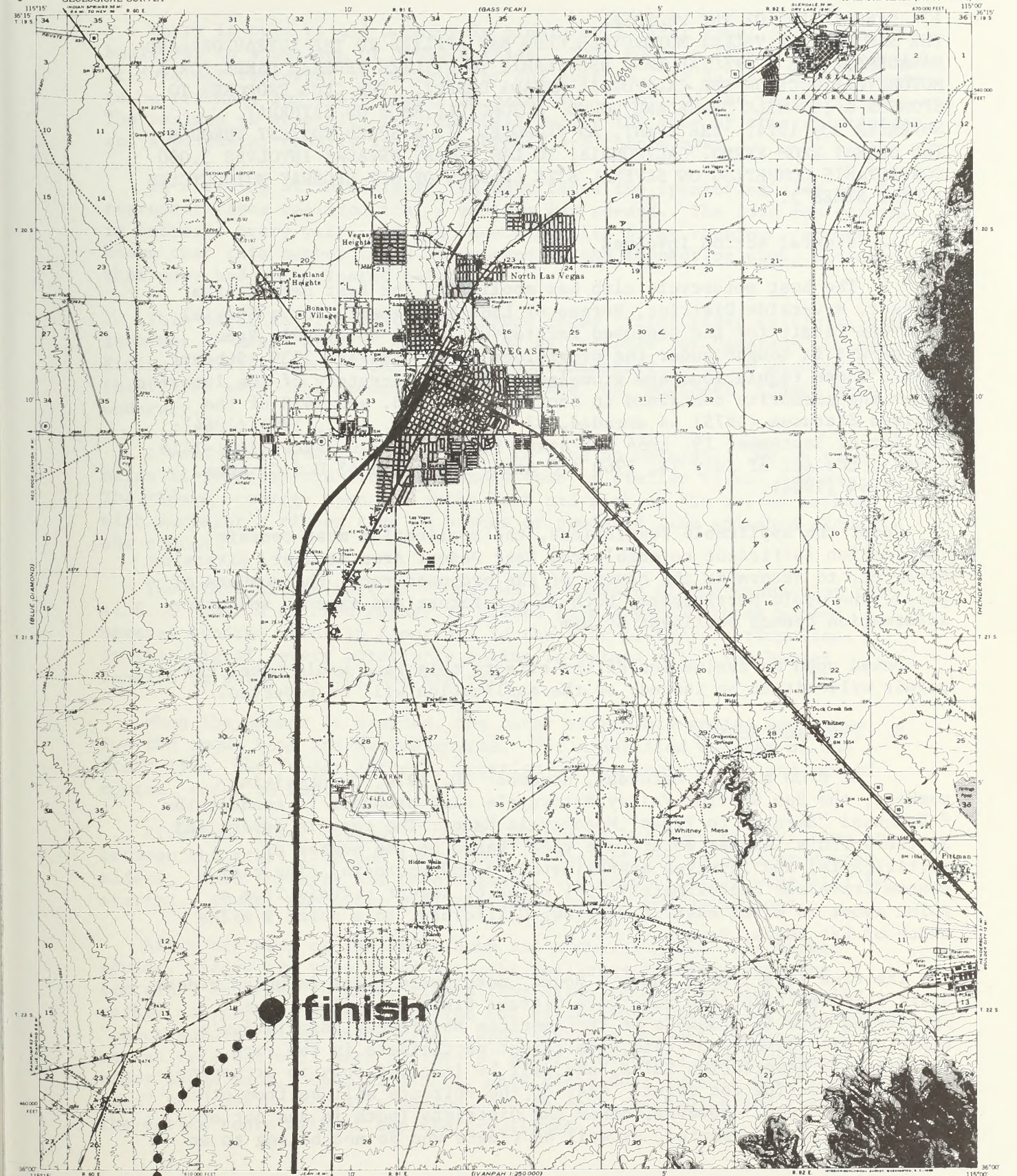
ROAD CLASSIFICATION
Heavy-duty ——— Light duty ———
Medium-duty - - - - - Unimproved dirt ———
Interstate Route ——— U.S. Route ———

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A FURTHER EXPLANATION OF THE MAP AND SYMBOLS IS AVAILABLE ON REQUEST

I-14

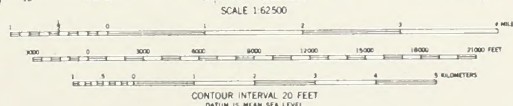
SLOAN, NEV.
N3545-W1500-15
1960

9



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Topography from aerial photographs by Keith plotter methods
and by plane table surveys. 1952. Aerial photographs taken 1950
Polyconic projection. 1927 North American datum.
10,000 foot grid based on Nevada coordinate system, east zone.
Red tint indicates areas in which only landmark buildings are shown.
Dashed land lines indicate approximate locations.

APPROXIMATE MEAN
DECLINATION, 1962



ROAD CLASSIFICATION
Heavy-duty double line Light-duty single line
Medium-duty double line Unimproved dirt dashed line
U.S. Route circle with number State Route circle with number

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I-15

LAS VEGAS, NEV.
N3600-W11500/15
1952

10

I. DESCRIPTION OF THE PROPOSAL

THE SAN GABRIEL VALLEY MOTORCYCLE CLUB HAS APPLIED TO THE BUREAU OF LAND MANAGEMENT FOR A SPECIAL LAND USE PERMIT TO UTILIZE FEDERAL LANDS FOR A MOTORCYCLE RACE ON THE CALIFORNIA-NEVADA DESERT. THE CLUB PROPOSES TO SPONSOR A 155-MILE "HARE AND HOUND" MOTORCYCLE RACE ON SATURDAY, NOVEMBER 30, 1974. THE EVENT, AS PROPOSED, IS A SPEED CONTEST THROUGH THE DESERT FROM YERMO, CALIFORNIA, TO LAS VEGAS, NEVADA; INVOLVES 3,000 CONTESTANTS COMPETING ON SEVERAL SIZE CLASSES OF OFF-HIGHWAY MOTORCYCLES ("DIRT BIKES").

A. Federal Action Involved

The host motorcycle club has applied to the East Desert Area Manager, Riverside District, Bureau of Land Management, for a Special Land Use Permit for the proposed Barstow-Las Vegas Motorcycle Race. The permit is sought under the provisions of 43 CFR Part 2920, Subpart 2924. These regulations are promulgated by the Secretary of the Interior under the authority contained in sections 446, 453, and 2478 of the Revised Statutes (1875) as amended, 43 U.S.C. secs. 1, 2, 1201 (1964); the Act of September 19, 1964 (78 Stat. 986); 43 U.S.C. secs. 1411-1418 (1964); the Act of July 14, 1960 (70 Stat. 506); and 43 U.S.C. secs. 1361-1364 (1964).

Under the applicable regulations, the application must contain information sufficient to enable the East Desert Area Manager, Riverside District, to determine the course of the proposed race, the numbers of people who would participate, both as spectators and racers, and other information deemed pertinent by him.

Based upon an evaluation of the effects this race would have, the permit will either be issued, or the application will be rejected.

B. Proposed Action

At 8:00 a.m. on Saturday, November 30, 1974, Thanksgiving weekend, the San Gabriel Valley Motorcycle Club proposes to conduct the 8th Annual "Barstow to Vegas" Motorcycle Race. The race is advertised as the world's largest motorcycle race (based on the number of participants) and involves approximately 3,000 entrants. The race course traverses approximately 155+ miles of desert terrain from a point about 20 miles east of Barstow, California, to a point 9 miles south of Las Vegas, Nevada.

The race is a lineal "Hare & Hound" motorcycle event in which riders start from one point and race to a distant finishing point. The sponsoring club is a member of the American Motorcycle Association's District 37. Members of this club cannot participate in the race according to Association Rules, and will be involved only in preparing for and conducting the event. Most of the entrants will be from other District 37 Clubs. However, other AMA Districts (both in and out of state) will be represented, as well as riders who do not belong to an organized club.

Entry is open to all motorcycle riders on a first come, first served basis, up to a maximum of 3,000 entries. This maximum figure is arbitrary. It does not represent an optimum for any purpose. It is one which is sure to be reached, and could easily be exceeded if not for the restriction. The maximum is generally reached weeks before the race by pre-registration, and applicants, usually in the hundreds, are turned away.

In arriving at this figure, in past races the sponsoring club and BLM representatives realized that a maximum was needed. The race was growing in entrants every year, and had been since its first running. It was known that this number could be managed by the sponsoring club, because that many had participated before.

This race, as with most other speed races (first rider to finish wins), involves a "mass" start. Riders rated as "experts" or "amateur" by AMA Riding Classifications start first. Approximately 15 to 30 minutes after this first wave, the second wave of "novice" or "beginner" riders gets underway.

A mass start requires all riders to line up abreast. Two to five miles in front of the line is a smoke bomb or similar signal device. The riders converge upon the smoke bomb and pick up the course marked with surveyor's ribbon tied on bushes or powdered lime splashed along the course.

The start of the race is conducted by members of the sponsoring club at 8:00 a.m. A colored banner is raised from a pickup truck parked several hundred yards in front and to the side of the starting line. At this signal, every motorcycle engine is turned off. The banner remains up until all engines are off.

When the banner is dropped, the racer starts his engine and races for the smoke bomb and marked course. For a detailed diagram of the start line, the "wedge effect", location of the smoke bomb, and marked course, refer to map.

After the first wave of 1,000-1,500 riders has been started, the area between the start line and smoke bomb is checked for injured or downed riders. Once the area has been cleared, the second larger wave will be started. Again, the start will utilize a banner and smoke bomb.

After arriving at the smoke bomb and converging onto the marked course, riders are then faced with the challenge of traversing the terrain. In order to deter riders from straying or short-cutting the marked course, the sponsoring club has established hidden and unannounced "check-points" along the course. Upon arriving at each checkpoint, course referees will mark a piece of paper previously taped to each rider's gas tank. Upon finishing, each rider must turn in the "tank card" to prove he actually passed through each checkpoint and traversed the entire route without any short-cuttings.

The race is approximately 155 miles long. Several designated "pit or gas stops" are required. The stops are generally 30 to 50 miles apart and have previously been referred to as the Razor Road, Valley Wells, and Stateline Pitting Areas. At each of these locations, riders arrange for someone to be on hand with additional gasoline and spare parts. The pit crew will usually "leap frog" the race, generally following I-15. That is, after seeing their riders off from the start, they will immediately take their campers, trailers, pickup trucks, etc., to the first pit stop at Razor Road. There they park along the course and wait for their riders. After the riders come in for gas and are sent on their way, the pit crew will go to the next gas stop. This procedure continues until both the pit crew and racers have arrived at the finish area.

The pitting process may be somewhat different if the crew has the responsibility of pitting for an entire club (6 to 40 riders). Then a club may have 3 separate pit crews stationed at each gas stop. In that case, "leap frogging" does not occur. Club pit crews are responsible for, and must account for, each of their club members.

The rider who finishes first and proves he passed through each established checkpoint along the course wins.

He is the overall winner. In addition to the overall winner, there will also be finishing placements for winners in several classes and categories. For example, the trail bike, lightweight, and heavyweight categories (all of which are based on the size of the engine displacement) will have their own finishing standings.

First to arrive at the area of the race start are usually the race referee and his family and other members of the sponsoring motorcycle club (San Gabriel Valley M.C.) who will officiate in the race. These people arrive the day before Thanksgiving or on Thanksgiving Day itself. These individuals and their families are the vanguard of the approximately 13,000 to 15,000 who will congregate here during the next several days.

Club members, families, individuals, and groups begin to swell the gathering on Thanksgiving and on Friday following. By midday Friday, many of the participants will have arrived at the starting area, together with families and friends. There will be a continual flow of participants and spectators into the area during the remainder of the day and throughout the night continuing up to the race start on Saturday morning. An estimated 10,000 to 12,000 spectators and support crewmen will be on the start site by the time of the race start. As race start-time approaches, it will be increasingly difficult to get to the starting line, either to participate or as a spectator, due to the heavy congestion of people and vehicles in the camp-race start area. The arrival of people at various times evolves from several factors: some individuals will spend the night in a Barstow motel and come to the race site early Saturday morning; some will have been required to have been on their jobs on Friday following Thanksgiving, and will leave their homes after work that day, arriving late Friday night. Still others will plan to be on

hand at the site for Thanksgiving dinner or leave for the area after having dined at home that day. Arrivals, therefore, will occur over a 48-hour period, from Thursday morning to Saturday morning.

Campsites, shown on Index Sheet 1-A, will be based upon club affiliations in many cases, as club members arrive and set up camp with other members. Eventually, hundreds of these communal sites will spring up, together with single family, single vehicle units, and the result will be one massive camp of more than 10,000 people, with their accompanying, assorted vehicles.

The vehicle assortment will run the entire gamut of types. Some will be more prevalent than others, but no one type will dominate. Vehicle types include cars pulling camp trailers, pickup trucks with campers, perhaps trailers with only motorcycles in the back, vans with built-in camping facilities, vans with nothing built in, carrying only gasoline cans and motorcycles, expensive motorhomes. Regardless of type, all will have in common the fact that they transport one or more motorcycles.

Most people (7,000-10,000) will spend a minimum of 1 day in camp prior to the race. Underlying all activity incidental to the campout will be preparation for the race itself. The machine to be entered in the race will be readied. The sparkplugs will be changed, cables and chains adjusted, tires checked, engines tuned.

There will be constant riding activity in and around camp as the racer, friends, and family "try-out" the machine to make certain it is in the best possible condition. Recreational riding will also be featured, as family members and individuals not intending to enter the race engage in the casual riding which typifies the activity one finds around all these camps.

The participating group has another common demoninator. These people are basically family oriented, whether it is as an individual family or group of families, or as club members. Cooking of meals is often shared by several members of a club. Babysitting is often organized on a communal basis to allow parents to go riding together. Evening activity centers around the club's communal campfire. Sharing is the common way of life.

On Saturday morning, immediately following the start of the second wave, the group will begin to break up and disappear. It is anticipated that less than 2 percent of the crowd will remain in the area through the following morning.

With the racers on their way, the spectators and crews all will pack up and head for home, the pit areas, or the finish in Las Vegas.

Except in isolated cases, the ultimate destination for spectators and participants is the finish point at Las Vegas (see Map 4-A). The leap-frogging pit and support crewmen, along with followers, arrive at the finish before the racers.

The racer to finish first overall will be there in early afternoon. Those following him will straggle in the rest of the day, and perhaps well into the night. Those who served the entire race at one pit will arrive late in the evening, or even next morning. Probably 75 percent of all those present at the race start will arrive in Las Vegas, Nevada.

There is an estimated population of 10,000 to 12,000 spectators and crewmen other than competitors at the start area on race day. The number of people at Rasor Road gas stop is estimated at 6,000; at the Shadow Valley gas stop, 4,000; at the Stateline gas stop, 4,000; and at the finish, 10,000. These groups at the gas stops and at the finish area are part of the initial group of 10,000 that was assembled at the start area.

Pit crews, friends, and family members leave the start area, traveling by highway, early in the morning of race day to be in place with gasoline when the competitors reach the gas stops. An estimated 800 to 1,000 riders will drop out or will otherwise not continue beyond gas stop 1 at Rasor Road. These competitors and the people with them will load their motorcycles and either return home or proceed on to the finish by highway. Pit crews and spectators who are with competitors able to continue the race will move ahead to another gas stop or on to the finish. An estimated 350 more competitors will drop out by the third gas stop at Stateline. These, too, will load up and go on to Las Vegas. Most of the estimated 1,300 competitors who leave the Stateline gas stop will finish the race. An estimated 1,000 spectators are expected to come from Las Vegas to watch the finish. Considering the migration up the trail from the start area, leaving the few Barstow resident spectators behind and allowing for those competitors who return home because of injury or early mechanical failure, the spectator crowd is formed around the same nucleus of competitors, crewmen, and spectators as was at Barstow, California, and will comprise about 8,000 persons.

C. Location

The proposed race traverses approximately 155 miles of the California-Nevada Desert, including approximately 132 miles on Federal lands. The proposed start of the race is approximately 20 miles east of Barstow, near Yermo, California (see Map 1-A). Three major pit stops are proposed at 30 to 50 mile intervals (see Maps 2-A through 3-A-1). The first is on Interstate 15 (I-15) at the Rasor Road off-ramp. The second is off I-15 north of the Cima Road off-ramp. The third lies off I-15 at the north end of Ivanpah Dry Lake. The proposed finish is approximately 9 miles south of Las Vegas, Nevada.

The location of the proposed course is shown on Map A and Map I-10. The course begins in Section 24, T. 11 N., R. 3 E., SBM, California. The proposed route runs easterly, north of I-15, 24 miles to East Cronese Lake. Here, the route turns south for 7 miles, crosses under I-15 to a point 3 miles south of the freeway. From here, the route swings easterly for 4 miles along the Mojave River, then northeasterly for 4 miles through the southern portion of the Soda Mountains, to the Rasor Road pit stop. From the pit stop at Rasor Road, the route extends

6 miles southeasterly around the Soda Mountains, then northeasterly for 6 miles across Soda Lake. The course hits the dry bed of Soda Lake approximately 1½ miles south of Soda Springs and proceeds to the Little Cow Hole Mountains. Here the route swings northward along the west side of the mountains and continues across the flats for 11 miles, passing under I-15 approximately 6 miles east of Baker, California. The route lies north of I-15 from this crossing to the California-Nevada State line. The route goes 2 miles east of the freeway crossing then turns north and east for 6 miles past Cree Camp and Hyten's Well, then 2.5 miles southeast to enter Bull Springs Wash. The route lies 4 miles northeasterly along Bull Springs Wash then 1.5 miles south around Soloman's Knob, then eastward for 9 miles across Shadow Valley to the Valley Wells pit area. From the pit, the route extends some 5 miles northward, turns eastward crossing Cima Road and extends 5 miles to Pachalka Spring. Here, the route turns south and loops 10 miles around Clark Mountain, passing between Mohawk Hill and Clark Mountain, then northeasterly 12 miles across Ivanpah Valley to the State-line pit stop. In Nevada, the route crosses under I-15 and proceeds northeasterly for 10 miles along the southeast edge of Roach Lake, through Beer Bottle Pass, and to the southeast of Sheep Mountain, then north 11 miles, crossing Jean Lake and Highway 466 some 6 miles northeast of Jean, Nevada. The route continues between the highway and the Union Pacific Railroad for 2 miles past the highway crossing. Here, the route turns north under I-15 and continues 13 miles northward to the finish area.

D. Relationship to the Interim Critical Management Program

That portion of the race proposed to be run in California traverses four areas which have been designated for vehicle use under the Interim Critical Management Program for Recreational Use on the California Desert (see Appendix 2). The starting area and approximately the first 55 miles of the course fall within the Mojave Basin (Area 25) Special Design Area. In addition, this area was also designated as a competitive event area. About 5 miles of the course between the Kelbaker Road and I-15 crosses over the Eastern Mojave Designated Road and Trails Use Area (#23). However, specific roads and trails have not yet been designated for this area. After crossing under the freeway, the course remains entirely within an Existing Road and Trails use area until arriving at the Ivanpah Valley Special Design use area (#21). The course crosses over approximately 10 miles of this competitive designated area. After leaving the Ivanpah Valley, the course then crosses over into Nevada, which is not included in the Interim Critical Management Program. However, the course in Nevada does traverse existing Roads and Trails. The entire course is held to existing roads and trails as defined in the Interim Critical Management Program for Recreation Vehicle Use on the California Desert.

The start area, where some 3,000 entrants and 10,000-12,000 spectators, family members, and support crewmen will concentrate, covers 3 to 4 square miles within the Mojave Basin Special Design Area. The first gas stop at Rasor Road also lies within the Mojave Basin Special Design Area. Again, this is a short-lived concentration area that will be evacuated by late Saturday evening.

The second gas stop at Valley Wells falls within an Existing Roads and Trails Area. As with Rasor Road, a great influx of people (approximately 5,000) will utilize a relatively small area, about one-half square mile, for a short period of time (10 hours).

The third gas stop, at the State line, falls within the competitive event Ivanpah Valley Special Design Area. Because of mechanical problems and human fatigue, only about one-third (or less) of the entries will pass this point. Concentration of use will be much less than the start area. The flat open lakebed utilized for this gas stop invites the users to spread out along perhaps a mile of the course for their activities here.

A major concentration of use (approximately 10,000 people) will be at the finish line from about 3:00 p.m. Saturday until about 9:00 p.m. the same evening. The area anticipated for utilization covers approximately one-half square mile and is centered around an old sand and gravel excavation area.

II. DESCRIPTION OF THE ENVIRONMENT

A. Nonliving

1. Topography

The race, as proposed, will be conducted over a variety of land forms through five individual closed basins. Major basins through which the course is mapped include the Mojave River, Shadow Valley, Ivanpah Valley, Jean Lake, and Las Vegas. The dominant land forms to be traversed will be gently sloping alluvial fans and older terraces above the basin bottoms. Over 65 percent of the course will be through this type of terrain with course gradient between 0 and 10 percent and elevations ranging from 950 to 4400 feet above sea level.

Approximately 20 percent of the course is mapped through dry streambeds with gradients up to 15 percent.

Eight percent of the total distance will be through six individual basin bottom playas, some with surrounding dune formations. Elevations of these nearly level land forms range from 930 feet in Soda Lake to 2750 feet in Jean Lake. Others include Roach Lake at 2603 feet, West Cronese Lake at 1080 feet, and East Cronese Lake at 1076 feet.

The remaining 7 percent of the distance is charted through hilly or mountainous terrain, separating the various basins, with course gradients of 6 to 20 percent.

Extremes in elevation over the course distance are a low of 930 feet at Soda Lake and a high of 4800 feet at Clark Mountain.

2. Climate

The climate of that portion of the desert over which the race is charted is arid to semi-arid. The annual rainfall ranges from less than 2 to occasionally more than 10 inches on some portions of the course. Only the area near the Clark Mountain is believed to average above 10 inches precipitation. The other areas average about 4 inches. Daytime temperatures during November are generally pleasant - 50 to 75 degrees Fahrenheit. Nighttime temperatures, however, may fall to freezing. Wind, except during infrequent November storms, is usually under 15 mph. The air is generally dry and skies are clear during November.

Weather records for Barstow are probably most typical for the racecourse except the higher precipitation area near Clark Mountain. That the Clark Mountain area is more moist is evident by the presence of larger trees and shrubs. Records from the weather station at Mountain Pass on the south slope of Clark Mountain indicate an annual rainfall of 6 inches in 1972 and 6 inches in 1973 with no record from the months of January and February. This partial record and the type of vegetation being produced, a pinon-juniper community, indicates an annual average rainfall of from 8 to 12 inches. Barstow has recorded over 1.3 inches

of precipitation in November in about 1 out of 7 years. Generally, it either rains about an inch or more in November or not at all. In 1972, it rained .69 inches 2 days prior to the race. This rain had negligible visible runoff or erosion as the soils, except in the playas, have infiltration rates of 0.3 to 0.45 inch per hour. The playas were also apparently quite stable. That is, they appeared to support the weight of motorcycles without excessive rutting. One exception was Soda Lake which was apparently quite slippery and showed some rutting. No systematic monitoring on the effect of wet soils was undertaken during previous races.

3. Geology and Minerals

The course begins in the eastern Mojave Desert province in California, a region sharing features of the Basin and range province of Nevada where the course ends. The topography is typified by north to northwest mountain ranges separated by broad valleys and basins, developed on structures (folding, faulting) of Laramide Mountain building (late Mesozoic). The mountains are largely formed of marine sedimentary rocks of Precambrian and Paleozoic age, and granitic intrusives of Precambrian and Mesozoic age with less extensive Tertiary volcanic flows and shallow intrusives. Areas of the mountains are flanked by erosional remnants of old alluvials (Pliocene, Pleistocene), with recent alluvial fans off the drainage. Valley areas have deep alluvial fill and basins are floored by playas (intermittent lakes), some of which were freshwater lakes in Pleistocene time.

Major structures and mineralization are related to the Laramide Mountain building. Compressional and torsional forces, probably from eastward movement of the Pacific plate, complexly folded and broke the old Marine sedimentary rocks on a northerly trend, accompanied by granitic intrusions and associated mineralization. Low angle thrust faulting continued well into Tertiary time. The important mineralization is associated with alteration or replacement of carbonate rocks (limestone-dolomite) veins, and in shear and breccia zones of faults in or near the intrusives. The carbonate rocks have mineral value where they are marketable.

There are no known vertebrate fossil-bearing sediments on the direct route of the proposed race, but four areas of fossiliferous sediments have been recorded within a mile or two of the proposed area of the undertaking's potential environmental impact. These areas are Alvord Mountains, Yermo Hills, Cronese Mountains, and Valley Wells. The Alvord Mountains and Yermo Hills localities are within 1 to 2 miles from the start. The Cronese Mountains locality area is situated above the proposed route of the course through the Cronese Lake area. The Valley Wells locality is directly across the Cima Road from Pit Stop 2.

No extensive work has been done in either the Alvord Mountains or the Yermo Hills areas, but localities yielding fragments of mammal bones have been recorded in the Tertiary deposits. Unconfirmed reports have indicated that the Tertiary deposits in the Cronese Mountains areas have yielded only a small amount of highly fragmented mammal bone.

Much more substantial finds have come from the Valley Wells locality. This is the first and most prolific locality in California to produce Equus simplicidens and the first locality to produce Equus conversidens (i.e., two rare species of horse). The Valley Wells locality may also be the only deposit of Irvingtonian Land Mammal Age in San Bernardino County.

There are no known geothermal resources or leases in the area. Playas have no known significant saline deposits. The area has no known active faults or history of seismic activity.

4. Water

Precipitation in the vicinity of the proposed race ranges from 4 to 10 inches annually with approximately 95 percent of the area averaging not more than 5½ inches. (See, also, Climate).

Because of the low precipitation rate and, for the most part, excessively drained soils, seasonal runoff for prolonged periods is nonexistent. All drainages and stream channels including that portion of the Mojave River can be said to be ephemeral, flowing only during and for a few days following high intensity convective storms or during the occasional years of heavy snowpack in the mountains. However, no flooding has been reported during November. Floods are expected only once in 20-100 years and then in March or April. Occasionally isolated thundershowers cause flash floods during July, August, and September. Thundershowers are not recorded for November. Playas, however, are poorly drained, as percolation is less than 0.15 per hour.

A 1972 study by the Bureau of Reclamation of the Ivanpah Valley through which the race is proposed best illustrates the aridity of these closed basins. Although the drainage area of the Ivanpah Valley is 685 square miles, water rarely flows in sufficient quantity to reach the dry playas where it is returned to the atmosphere by evaporation. The total arable acres in this valley are estimated at 48,860, but in the absence of adequate supplies of water there is no beneficial use for this purpose.

Ground water supplies in the alluvial fill of the Ivanpah Valley range from 90 feet to 365 feet and are considered inadequate for other than domestic livestock and small mining operations. Recharge of ground water supplies in the individual basins along the proposed course is by percolation of the rainfall in the mountainous areas into the alluvial valley fills. Quality of ground water in Ivanpah and other basins varies widely with some of the existing wells testing to over 2,000 ppm of dissolved solids putting it in the poor to very poor category for domestic, irrigation, or industrial purposes. Dominant constituents are sodium bicarbonate, sulphates and chlorides of calcium and magnesium.

TABLE II-A-1 - GENERAL CHARACTERISTICS OF SOIL ASSOCIATION

1. Soils Without Profile Development

Map Symbol	Soil Series	Parent Material	Setting	Depth of Soil	Surface Texture	Surface Conditions	Subsoil Texture	AWC/ 48"	Erosion Hazard	Additional Information
A C	Cajon	Mixed Alluvium	Nearly level to sloping fans	60"+	Sandy Loam	Weak sub- angular structure 20% gravel	Sandy Loam	4.0	Slight to mod. wind & water	Strongly Calcareous
			Nearly level to sloping fans	60"+	Sand or Fine Sand	Moderate platy structure 5% gravel	Sand	3.0	Mod. to High Wind	Sandy Throughout
			Nearly level to sloping fans	60"+	Gravelly Sand	Weak Platy Structure 30-50% gravels	Very Gravelly Sand	2.0	Slight to mod. Wind & Water	High % of coarse fragments
A D	Arizo	Mixed Alluvium	Nearly level to sloping fans & low terraces	60"+	Gravelly Sand	Massive Structure 30-50% gravels	Very Gravelly Sand	2.0	Slight to mod. wind & water	High % of coarse fragments
			Nearly level to sloping fans & low terraces	60"+	Gravelly Sandy Loam	Massive Structure 30-50% Gravel	Very Gravelly Sandy Loam	2.5	Slight to mod. wind & water	High % of coarse fragments
			Nearly level to sloping fans	60"+	Fine Sand	Single grain, loose	Sand	3.0	Mod to High wind	Sandy Through- out
C J	Cajon	Dominan- tly Granitic Alluvium	Nearly level to sloping fans	60"+	Fine Sand	Single grain, loose	Sand	3.0	Mod to High wind	Sandy Through- out

(Cont'd. next page)

Rosamond	Dominantly Granitic Alluvium	Nearly level fans & basin rims	60"+	Loam	Mod to strong platy structure	clay loam	8.0	Wind	Slight to mod.	Calcareous throughout some soluble salts
R P	Mixed Alluvium	Closed basin		Silt Loam	Weak to mod. platy	Silt loam to silty clay loam		Slight to mod. wind	Slight to mod.	Saline alkali
	Playa (Mis.Land Type)		60"+	to Clay Loam			9.0	wind		

2. SOILS WITH RESTRICTIVE DEPTHS

Mohave variants	Mixed Alluvium	Nearly level to sloping terraces	36"	Sandy Loam	Weak Platy Structure	Sandy clay Loam	5.0	Mod Wind		Caliche layer 32-40"
M A	Adelan to Variants	Nearly level to sloping terraces	36"	Sandy Loam	Granular Structure	Sandy Loam	5.0	Mod Wind		Caliche layer 15-48"

3. MISCELLANEOUS LAND TYPES

D U	Dune- land	Eolian	Flood Plains, Alluvial fans, and basins	60"+	Sand or Fine Sand	Single Grain Loose	Sand or Fine Sand	-	High Wind Slight Water	0 to 30% Slopes
G R	Rock- land	Domin- antly Granitic	Uplands	Very Shallow	-	30 to 90% Rock Outcrops	-	-	Mod to high water	8 to 65%+ slopes

Summary of wind erosion potential for the entire course (From Table II-A-1)

Wind Erosion Potential	% of Course
High	21
Moderate-high	25
Moderate	24
Moderate-low	6
Low	24

5. Soils

Five soil associations and two miscellaneous land types were mapped along the proposed racecourse. The General Soil Map Index can be found on pages II-72, et seq. The major portion of the racecourse, approximately 50 percent, is on the Anthony-Cajon-Arizo Association. The soil series described in Table II-A-1 were not mapped. Within each soil association the individual soil series vary widely in erosion hazard. In the Ac soil association (on Table II-A-1) erosion hazard ranges from "slight" to "high".

Approximately 15 percent of the course is on the Rosamond-Playa Association and 15 percent on the Rockland Association. The remaining 20 percent is divided among the Arizo-Daggett Association, Cajon Association, Mojave-Adelanto Association and Duneland Association.

The major source of information is from a statewide general soil map done in 1968 by the Soil Conservation Service (Borst, SCS, 1968). A small portion of the racecourse was mapped from a county level general soil map of San Bernardino County. The soils information was extended to cover the racecourse in Nevada.

Although no tests have been made, it is believed that compaction would be much greater if the soils were wet at the time of the race.

6. Air

The proposed course is located in the Southeast Desert Air Basin in California and in Clark, Mojave, Yuma Air Quality Control Region in Nevada.

The San Bernardino Air Pollution Control District (APCD) has compiled air quality data for the desert in the Victorville, Barstow, and Needles Area on an annual basis. Air quality of the Las Vegas Valley is monitored by the Clark County District Health Department, Air Pollution Central Division. Stations nearest the racecourse, McCarran Airport and Arden, are included in this description of existing conditions.

a. Gaseous Contaminants

Table II-A-1 indicates the high quality of the desert air basin in comparison to the quality of South West Air Basin, as monitored by the San Bernardino Station.

This does not include suspended particular matter which is treated separately in this narrative.

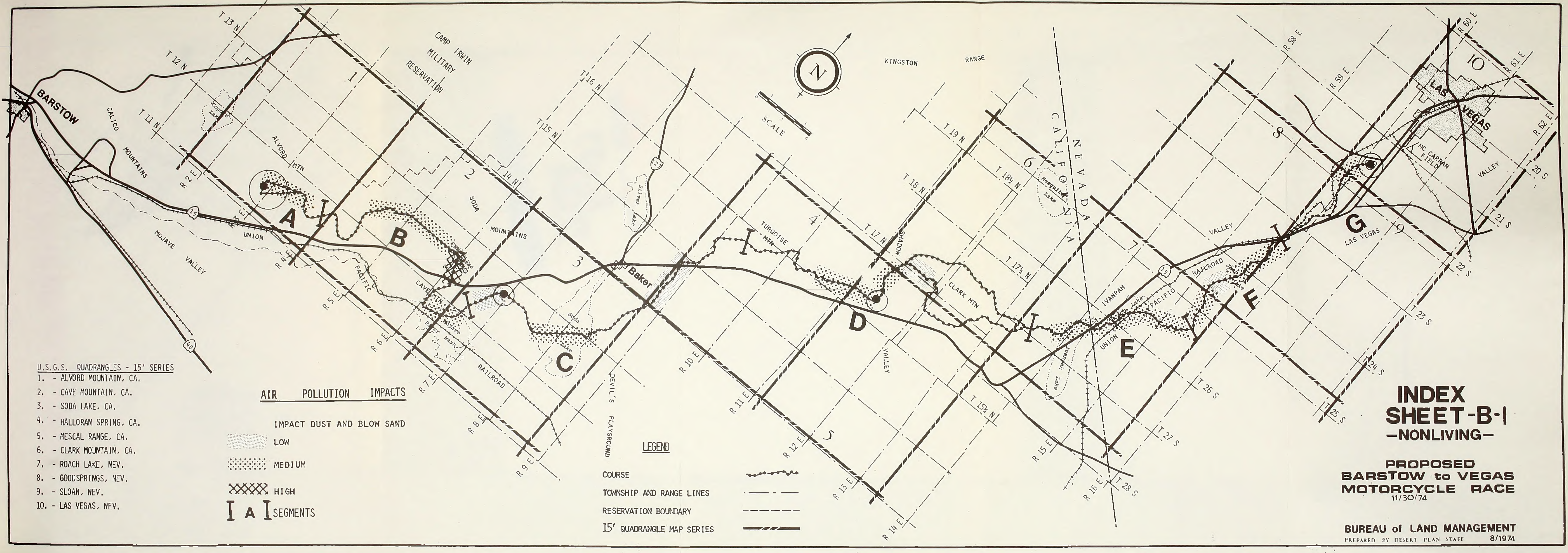
TABLE II-A-2
DAYS FEDERAL AIR QUALITY STANDARDS EXCEEDED - 1973

	San Bdo.	Victorville	Barstow	Needles	Las Vegas
OXIDANT	175	122	7	0*	125
Carbon Monoxide	3	0*	0*	0*	16
Nitrogen Dioxide	0	0*	0*	0*	0
Sulphur Dioxide	0	0*	0*	0*	0

- 1 Oxidants are associated with photochemical smog, which causes eye irritation, visibility reduction and plant damage.

* Based on professional estimates by San Bernardino County APCD.

The effect and magnitude of potential vehicle emissions is unknown. Petrochemical pollutants emitted from motorcycles has been determined by the Environmental Protection Agency to be more than that emitted from automobiles. Also, the thousands of cars transporting the race spectators will emit much pollution. However, the possibility of the pollutants being photochemically converted to ozone, nitrogen dioxide, or sulphur is unknown. The presence or potential lingering of air pollutants is much dependent on the winds or airflow and is also unknown and presently unpredictable.



U.S.G.S. QUADRANGLES - 15' SERIES

- 1. - ALVORD MOUNTAIN, CA.
- 2. - CAVE MOUNTAIN, CA.
- 3. - SODA LAKE, CA.
- 4. - HALLORAN SPRING, CA.
- 5. - MESCAL RANGE, CA.
- 6. - CLARK MOUNTAIN, CA.
- 7. - ROACH LAKE, NEV.
- 8. - GOODSPRINGS, NEV.
- 9. - SLOAN, NEV.
- 10. - LAS VEGAS, NEV.

AIR POLLUTION IMPACTS

- IMPACT DUST AND BLOW SAND
- LOW
- MEDIUM
- HIGH
- I A I SEGMENTS

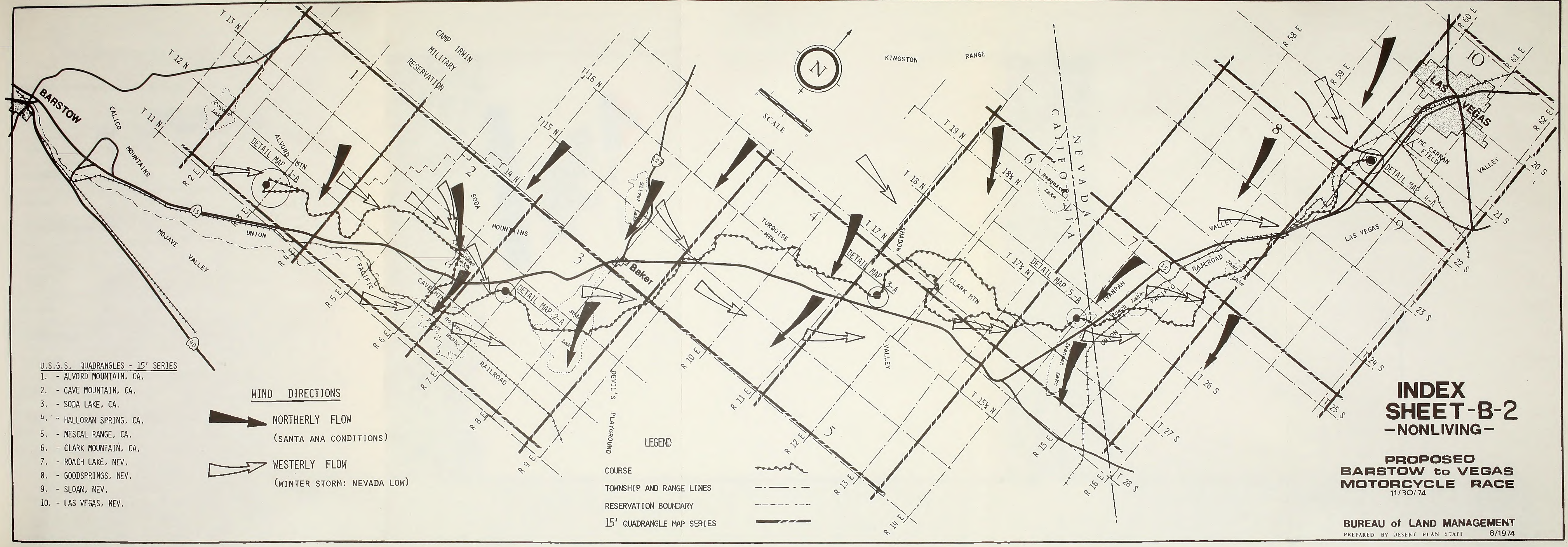
LEGEND

- COURSE
- TOWNSHIP AND RANGE LINES
- RESERVATION BOUNDARY
- 15' QUADRANGLE MAP SERIES

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PROPOSED BARSTOW to VEGAS MOTORCYCLE RACE 11/30/74





U.S.G.S. QUADRANGLES - 15' SERIES

- 1. - ALVORD MOUNTAIN, CA.
- 2. - CAVE MOUNTAIN, CA.
- 3. - SODA LAKE, CA.
- 4. - HALLORAN SPRING, CA.
- 5. - MESCAL RANGE, CA.
- 6. - CLARK MOUNTAIN, CA.
- 7. - ROACH LAKE, NEV.
- 8. - GOODSPRINGS, NEV.
- 9. - SLOAN, NEV.
- 10. - LAS VEGAS, NEV.

WIND DIRECTIONS

- NORTHERLY FLOW
(SANTA ANA CONDITIONS)
- WESTERLY FLOW
(WINTER STORM: NEVADA LOW)

LEGEND

- COURSE
- TOWNSHIP AND RANGE LINES
- RESERVATION BOUNDARY
- 15' QUADRANGLE MAP SERIES

INDEX SHEET-B-2 -NONLIVING-

PROPOSED BARSTOW to VEGAS MOTORCYCLE RACE
11/30/74

BUREAU of LAND MANAGEMENT
PREPARED BY DESERT PLAN STAFF 8/1974

TABLE II-A-3

TREND DATA FOR SPECIFIC DESERT STATIONS IS GIVEN IN THE FOLLOWING TABLE:

STATION	AVERAGE SUSPENDED DUST IN MICROGRAMS PER CUBIC METER					
	1966*	1967*	1970	1971	1972	1973
AMBOY	39	18	-	-	-	-
VICTORVILLE	139	122	74	89	102	119
BARSTOW	73	53	87	74	75	102
TWENTYNINE PALMS	58	45	-	-	-	40
NEEDLES	35	23	-	49	-	-
BAKER	46	39	-	-	-	-
MT. PASS	63	39	-	-	-	-
LUCERNE VALLEY	-	-	-	91	85	75
CLARK COUNTY (1)	-	-	44	44	46	60
CLARK COUNTY (2)	-	-	28	34	32	38

* Suspended Dust Study, San Bernardino APCD.

(1) Station at Mc Carran Airport near Las Vegas.

(2) Station at Arden near the finish area in Nevada.

b. Suspended Particulate Matter

Suspended particulate matter is defined here as particles ranging in diameter from .01 to 30 microns. Larger particles (over 30 microns) are considered "fallout".

Dust in this desert region is basically comprised of clay, silt, and find sand.

Clay (.01 to 2 microns)	Suspended Matter
Silt (2 to 30 microns)	
Fine Sand (30 to 50 microns)	Fallout and Blow Sand
Sand (over 50 microns)	

Disturbance to the desert surface will tend to increase the level of particulate matter. This is partially true of areas where clay and silt surfaces are exposed to heavy wind conditions. (See Table II-A-3).

The actual suspended dust average level was established in a study conducted over a 2-year period, 1966 and 1967 (Suspended Dust Study, San Bernardino County APCD). It was found that the average levels of the desert and mountain regions was about one-half of the average level in the inland valley portion of San Bernardino County.

Inland Valley	119.1 micrograms per cubic meter
Mountains	56.6 micrograms per cubic meter
Desert	59.2 micrograms per cubic meter
(Table II-A-3, however, shows the variability within these averages.)	

In the Conclusions section of the study, it is stated that "the average suspended dustload values in the desert are very low, as compared with values for the National Dust Sampling Network."

The dustload during and for at least several hours after past races was observably increased. In fact, the basin of the start area was filled with dust to an air depth of at least 500 feet above the surface. How long that dust remains is unknown.

c. Air Movement

The station at Daggett provides the only source of data on wind direction and velocity for this region. It can be noted from the table that wind velocity is about as high in November as during the months of April, May, June, and July. The prevailing air movement is west to east in November and from the northeast or northwest during the spring months. During the infrequent winter and spring storms the wind is from the southwest.

	1972	1973
January	8.2	9.3
February	10.2	7.5
March	11.9	14.4
April	14.0	14.5
May	13.2	13.4
June	12.4	14.2
July	14.1	12.9
August	10.9	11.7
September	10.6	11.4
October	9.6	9.8
November	8.8	13.4
December	9.7	9.9

Hourly Wind Average, mph
Daggett, California

This table also shows that wind velocities are highly variable from year to year. No reliable average monthly wind can be calculated from only 2 years of records.

d. Surface Hazard

All surfaces found in the desert environment are variously susceptible to erosion by wind. Susceptibility to wind erosion is a function of wind velocity and surface texture or particle size. Wind velocity will be considered in another portion of this report.

Areas of high erosion hazard are those of fine surface textures, i.e., clay and silt. Material of this size can be removed and held in suspension by winds of less than approximately 12 mph. Above this threshold, coarser material, i.e., sand, begins to be entrained and transported by the processes of creep and siltation. Winds in November can exceed 12 mph during advancing stormfronts.

Surfaces peculiar to desert environments warrant special consideration. The evolution of desert surfaces through time trend toward stability in resisting erosion. An equilibrium is achieved through the development of a slightly indurated surface in fine-textured soils or through the evolution of a veneer of coarse gravel and cobbles known as "desert pavement." After the first substantial rain, the thin surface crust begins to form. But vesicular crusts on silt-loam soils take much longer to form. The total soil rebuilding may take from 10 to 100 years to occur. It depends on many variables including precise particle size, water, and wind speeds which are not presently accurately quantified along the proposed racecourse.

e. Effect of Topographic Features on Wind

Though limited in area, the "venturi" effect is of considerable local importance. In this situation, relief features concentrate airflow through relatively constricted passages. In that a large amount of air is "funneled" through a narrow gap. The only way in which it can be accommodated is through an increase in velocity through the constriction. Within the area being considered here, the Cronese Basin (Section B) is a good example of the "venturi" effect, especially during westerly flow.

Air movement, in a larger sense, may also be impeded or enhanced by the alignments of mountain barriers. Surface roughness created by the arrangement of mountain axes athwart the general direction of air movement reduces wind velocity through increased turbulence. However, when the alignment of mountain ranges is parallel to the movement of air, turbulence is reduced, and maximum wind velocity can be approached. Major basins traversed by the course being considered are generally aligned in a N-S direction. Therefore, these basins (Sections C, E, F, G, on Index Sheet B-1) present a generally rough surface to westerly winds that impedes air movement. Northerly air movement, however, is greatly enhanced by this configuration and resultant velocities are generally high.

Any surface, within the study area that presents a relatively long, uninterrupted surface to the prevailing wind is likely to experience moderate to high winds, velocity increasing with the length of uninterrupted surface over which the air moves.

f. General Airflow in the Mojave Desert (October-January)

Prevailing winds in the Mojave Desert (latitude 34° - 36° N) are generally from the west, under the influence of mid-latitude westerly circulation. Regional atmospheric conditions that modify direction and intensity of surface winds are of two general types: winter cyclones; stationary high pressure systems (anticyclones). The winds are quite similar in October, November, December, and January.

Periodic winter storms tend to intensify westerly movement and add a southerly component, resulting in a WSW to SW regional

Table 11-A-4

Relative Noise Levels

Noise Source	Sound Pressure Level (dB) (a)	Relative Intensity	Relative Change in Sound Energy
Threshold of Hearing	0-3	Faint	1
Quiet Suburban Residential Area	36-40	Quiet	1,000
Voice (Conversational Level)	60	Moderate	1,000,000
Major Urban Freeway (at 100') (b)	75-80	Loud	100,000,000
Off-Road Motorcycle (at 50')	90-105	Deafening	10,000,000,000
Jet Aircraft	120	Intense	1,000,000,000,000
Threshold of Pain	134-140		

a. decibels measured on "A" Scale of Standard Sound Level meter.
A change of approximately 10dB represents a doubling, or halving, of perceived loudness or noisiness of a sound. (2)

b. 6000 to 10,000 vehicles/hr. 8 Lane Freeway (2).

Source:

2. Environmental Protection Agency, Report to the President and Congress on Noise, Feb. 1972.
3. Environmental Protection Agency, Public Health and Welfare Criteria for Noise, July 1, 1973.
4. William S. Gatley & Edwin E. Frye, Regulation of Noise in Urban Areas - A Manual, Aug. 1971 Reprint - Environmental Protection Agency Office of Noise Abatement and Control.
5. Clifford R. Bragdon Noise Pollution University of Pennsylvania Press Inc. Philadelphia 1971.

flow. During passage of cyclonic storms, winds may blow from several directions; however, net movement is still westerly in a typical storm. Thus, prediction of influence of wind where the proposed course crosses the freeway is unavailable.

Anticyclonic circulation is a result of a stationary high-pressure system centered in the Great Basin. Winds associated with these conditions are known locally as "Santana" winds. Under these conditions, air movement is dominantly from the north, but may vary from NW to NNE.

Although the Santanas are well-known for their high velocities in the coastal lowlands of Southern California, they only rarely reach extreme velocities in the Mojave. This lower intensity coupled with relative infrequency, makes these winds of secondary importance in comparison to westerly circulation.

In early fall, westerly circulation can be further enhanced by the strong thermal gradient between the warm desert and cooler coastal regions.

Surface winds at any particular point owe much of their direction and intensity to local topography. In broad, open plains, with little surface roughness, winds can achieve high velocity and steady flow in the direction of regional air movement. Mountain barriers and broken topography will variously focus, impede, or redirect local winds. Wind erosion is thus a function of topography and surface materials. Precise wind patterns in the basins traversed by the racecourse are undocumented.

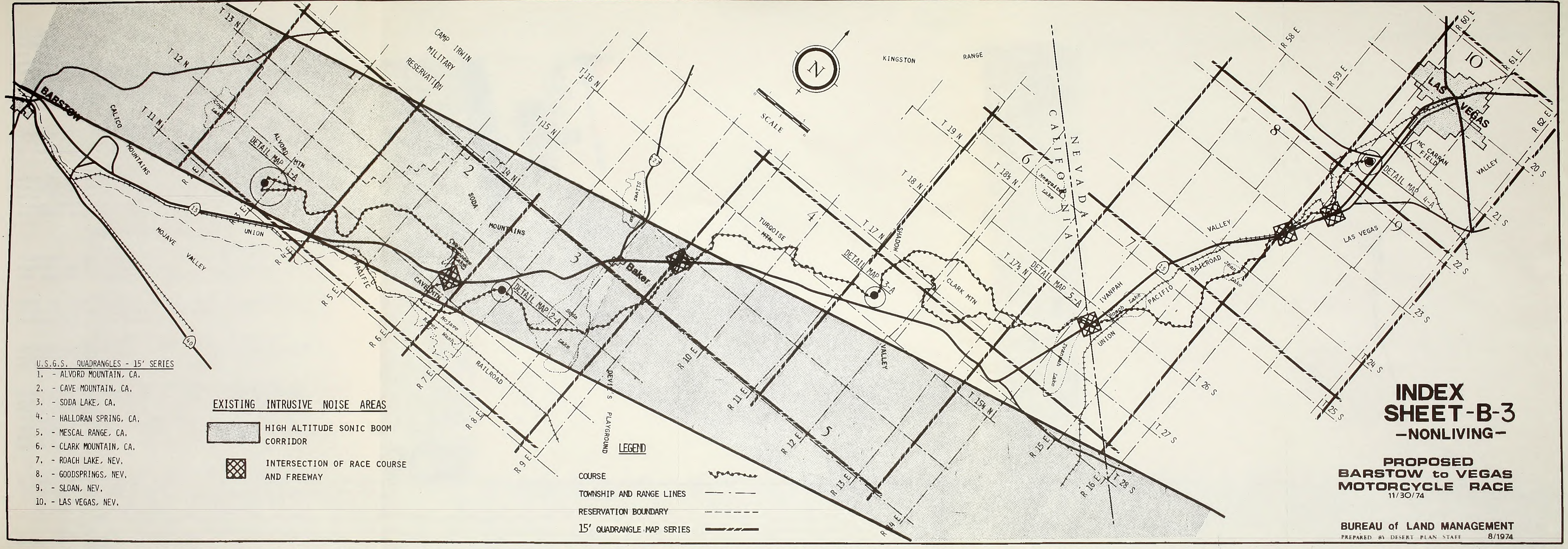
7. Noise

a. Introduction

The sounds of silence dominate the desert landscape. Silence is a resource. These sounds which man typically associates with pristine natural environments are perceived by the senses as solitude. The solitude of the desert is one of its dominant characteristics as well as one of its many valuable resources. The desert environment through which the proposed 157-mile racecourse traverses engenders this feeling of solitude in the visitor when he pauses to experience it.

b. Existing Intrusive Noise

Existing intrusive noise along and within the vicinity of the proposed racecourse consists of automobile traffic noise at five locations and infrequent airborne noise including sonic booms. Index sheet B-3, Nonliving, shows the location of the aircraft test corridor as well as the locations where the proposed racecourse intersects or becomes approximately tangent to Interstate 15.



U.S.G.S. QUADRANGLES - 15' SERIES

- 1. - ALVORD MOUNTAIN, CA.
- 2. - CAVE MOUNTAIN, CA.
- 3. - SODA LAKE, CA.
- 4. - HALLORAN SPRING, CA.
- 5. - MESCAL RANGE, CA.
- 6. - CLARK MOUNTAIN, CA.
- 7. - ROACH LAKE, NEV.
- 8. - GOODSPRINGS, NEV.
- 9. - SLOAN, NEV.
- 10. - LAS VEGAS, NEV.

EXISTING INTRUSIVE NOISE AREAS

- HIGH ALTITUDE SONIC BOOM CORRIDOR
- INTERSECTION OF RACE COURSE AND FREEWAY

LEGEND

- COURSE
- TOWNSHIP AND RANGE LINES
- RESERVATION BOUNDARY
- 15' QUADRANGLE MAP SERIES

INDEX SHEET-B-3 -NONLIVING-

PROPOSED BARSTOW to VEGAS MOTORCYCLE RACE
11/30/74

BUREAU of LAND MANAGEMENT
PREPARED BY DESERT PLAN STAFF 8/1974

Existing traffic noise at the five locations where the proposed racecourse intersects or comes near Interstate 15 has been estimated to be of moderate intensity at a distance of 100 feet from the freeway. This estimate is based on data shown in Table II-A-4 and peak-hour traffic passing the five locations where the racecourse and Interstate 15 intersect. Table II-A-4 shows that the noise level from a major urban freeway at a distance of 100 feet is in the range of 75 dB to 80 dB or a relative intensity of "loud". This freeway noise level is produced by a continuous traffic flow of between 6,000 to 10,000 vehicles per hour.

Peak-hour traffic flow at the five locations shown on Index Sheet B-3, Nonliving, is within the range of 1,400 to 1,500 vehicles per hour; 4 percent of which is truck traffic.^{1/} This hourly traffic flow is considerably less than that of a major urban freeway.

Approximately 65 miles of the proposed racecourse is within the boundaries of an aircraft test corridor approximately 12 miles wide (refer to Index Sheet B-3, Nonliving). Military and Civil Aircraft tested within this corridor sometimes exceed the speed of sound. This testing tends to generate sonic booms along the ground. However, boom occurrences within this corridor are infrequent.

Noise Impact Assessment Principles

The following "principles" gathered from the available literature on noise as well as the data contained in Table II-A-4 were utilized to assess the impact of noise on the racecourse corridor, start area, spectator and camping areas, pit areas, and finish area.

Sound is the result of a source setting a medium (air, water, etc.) into vibrations. Once the source of the sound ceases, the movement of air particles ceases, the sound waves disappear, and almost instantaneously, the sound ceases.

Noise can be defined simply as unwanted sound usually unpleasant and irritating to the ear. However, whether a sound becomes noise is, in many instances, all in one's point of view. Hard rock music and deafening motorcycles are just two examples.

A sound or noise radiating into an area free from buildings and other obstructions such as a desert environment will decrease approximately 6 dB for each doubling of the distance from the source. For example, an off-road motorcycle emitting 100 dB at 50 feet would emit 94 dB at 100 feet. Interestingly, 94 dB is the point where human communications become impossible if the speaker and listener are more than a few feet apart. Even at this short distance, they would have to shout.

1. State of California Department of Transportation, 1972 Traffic Volumes on California State Highways.

Experimental evidence, with respect to humans, supports the view that intermittent or one-time exposures to high levels of noise separated by relative quiet is less than the effect of the same total noise exposure received unbroken.

The cumulative noise level from a number of noise sources is not the arithmetic sum of all sources, but rather a decreasing but additive logarithmic sum.

B. Living Components

Vegetation and Animals

There are 14 different kinds of wildlife habitats along the racecourse. Habitats range in type from Crucifixion Thorn and Alkali Sink communities at low elevations to yucca-cactus forests and Pinyon-Juniper Woodland at 5000 feet. The 14 habitats support a great diversity of vertebrate wildlife; there are 2 species of amphibians, 36 of reptiles, and 101 of birds (not including migrating and visiting birds), and 56 of mammals. Some species occur in many habitats; others are highly restricted in distribution. The relationship of each species to habitat type is shown in Tables II-B-1, 2, and 3 (see Table II-B-7 for a listing of numbers of amphibians, reptiles, birds, and mammals for each habitat.) Distribution of species by habitat is illustrated on the Living Map Index on pages II-95 through II-116.

The vegetation and wildlife occurring along the racecourse are discussed by habitat type under 14 habitat categories. This is done for a number of reasons. Many habitat types reoccur in several locations along the course. For example, there are several lakebeds and the associated Alkali Sink habitats on the playa edges. See Habitat Type Maps 1-10, beginning on page II-85.

Many species are significant for one or more reasons. Some are rare, endangered, or threatened with extinction. Others are fully or partially protected by state laws. Certain species are significant because they are limited in geographic distribution and habitat type due to physiological and ecological requirements. Some have special values for education, science, and recreation. Significant species are depicted in Tables II-B-4, 5, and 6. Nineteen significant species of reptiles, 37 of birds, and 19 of mammals occur along the racecourse.

ALKALI SINK - LAKE EDGE (3.20 miles; 9.0 acres)

Plant Communities. Alkali Sink plant communities are found on the fringes of East and West Cronese Dry Lakes, Soda, Ivanpah, Roach, and Jean Dry Lakes at elevations of 1000 to 2750 feet. Dominant species are four-wing salt bush (Atriplex canescens) or quail bush (Atriplex lentiformis). Other species present include inkweed (Suaeda torreyana), greasewood (Sarcobatus vermiculatus), salt grass (Distichlis spicata), galleta grass (Hilaria rigida), and alkali saccaton (Sporobolus aeroides). Common herbs are Russian thistle (Salsola kali), apricot

mallow (Sphaeralcea ambigua), birdcage primrose (Oenothera caespitosa), desert dicoria (Dicoria canescens), and plantain (Plantago insularis). These communities merge with Creosote-Burrobush, Creosote-Four-Wing salt bush, and Mesquite-Tamarisk communities.

Rare Wildflowers. (See Appendix II-B-3 for lists and definitions). There are four locally rare species and five possible species in the expected rare category. Locally rare species are Preuss locoweed (Astragalus preussi), Coulter Psilactis (Psilactis coulteri), Mt. peppergrass (Lepidium montanum cinereum), and Goodings Phacelia (Phacelia pulchella goodingii). Expected rare species are alkali star tulip (Calochortus striatus), alkali grass (Puccinella parishii), and lowland purslane (Trianthema portulacastrum).

Wildlife. Alkali Sink - Lake Edge communities support about 41 species of vertebrate wildlife: 4 species of lizards, 10 of snakes, 12 of birds, and 15 of mammals. Most species found here are present in many other communities. However, 4 species of reptiles and 7 of mammals are on the Significant Species Lists (Tables II-B-4, 5, and 6). These are desert horned lizard, California kingsnake (which are partially protected by State Fish and Game Codes), and the Utah black-headed snake and desert night snake (both of which are uncommon to rare in the desert). Mammals on the Significant List are partially protected and are hunted for sport or for pelts. Two, the kit fox and burro are fully protected by state and Federal law. The chisel-toothed kangaroo rat has special habitat preferences; it is found only around some dry lakebeds and in some desert blackbrush communities. Of the significant species, the chisel-toothed kangaroo rat may be the most important because of the extremely limited habitats.

Although no surveys were made of the invertebrate fauna of dry lakebeds, there are probably several species of crustaceans, commonly known as fairy shrimp. Fairy shrimp are ephemerals whose eggs are present on and in the top few millimeters of the lake surface. When rainstorms fill the lakes with water, eggs may hatch and the shrimp complete life cycles in 6 to 8 weeks. Desert playas apparently have different species, or different composition of species depending upon soil type, salinity, and the time of year that the rains come. Some desert lakes support rare species; however, little is known of the habits and distribution of the shrimp.

Existing Habitat Conditions. The habitat in the Alkali Sink community has had considerable abuse from past motorcycle use. The course is one-half mile wide in many places. Throughout the impacted area, many of the smaller perennial shrubs have been destroyed. Soil disturbance, although not intense in any one area, extends the entire width of the racecourse area. The effect has been an overall reduction in habitat quality.

ALKALI SINK WITH MESQUITE (SPRINGS)
(3.20 miles; 639.0 acres)

Plant Communities. Alkali Sink with Mesquite is found on the

southern edges of West Cronese Lake, the northwest edge of East Cronese Lake, and the southwestern edge of Soda Lake 1.5 miles south of Old Fort Soda at elevations of 1000 to 1100 feet. Vegetation is predominantly alkali goldenbush (Haplopappus acradenius) and mesquite (Prosopis glandulosa). The goldenbush lies between hummocks of mesquite. Other species are four-wing salt bush, arrowweed (Pluchea sericea), salt grass, galleta grass, blunt-leaf stinkweed (Cleomella obtusifolia), Russian thistle, and birdcage primrose. This plant community either borders Creosote Bush communities, Alkali Sink - Lake Edge, or dry lake bottoms.

Wildflowers. This habitat has four locally rare species and five expected rare species. These are the same species as occur in the Alkali Sink - Lake Edge communities.

Wildlife. The diversity and density of wildlife increases markedly in the mesquite and springs area. Presence of mesquite accounts, in many instances, for the increased numbers of species. There are about 72 species: 1 amphibian, 20 of reptiles, 30 of birds, and 21 of mammals (Tables II-B-1, 2, and 3). Twenty-five of these are on the Significant Species Lists (Tables II-B-4, 5, and 6): 8 reptiles, 10 birds, and 7 mammals.

The one amphibian species is possibly present at the alkali spring south of Old Fort Soda. Of the 8 reptiles, 6 are partially protected by State Fish and Game Codes because of diminishing populations and loss of habitat. These are the banded gecko, desert iguana, Mojave fringe-toed lizard, leopard lizard, and California kingsnake. Two others, the desert night snake and Utah black-headed snake, are uncommon to rare in the desert.

There are 8 significant species of birds. Two, the gambel quail and mourning dove, are game birds. The burrowing owl and bewick wren are both on the Blue List of birds whose populations are diminishing to such an extent that ornithologists have registered concern. The rest - the black-tailed gnatcatcher, song sparrow, verdin, and crissal thrasher are on the List of Significant Species because of limited distribution and special habitat requirements. California verdin and black-tailed gnatcatcher are typically found in dense mesquite and catclaw clusters in washes with other desert trees and shrubs. Crissal thrashers are uncommon in California, and can be found in small numbers in dense mesquite and catclaw. There are probably few in this plant community.

Mammals on the Significant Species List include small game such as desert cottontail and black-tailed hare, and such predators as the coyote, kit fox, badger, and bobcat that occur throughout much of the desert. The kit fox and burrow are fully protected by state and Federal laws.

The most important significant species in this community are the Mojave fringe-toed lizard, which is restricted to large windblown sand deposits and dunes in the southern Mojave, and the verdin and black-tailed gnatcatcher.

Existing Habitat Conditions. The nature of this habitat type, mesquite hummocks and windblown sand, has restricted past ORV use to a few trails and existing roads. In one area, where motorcycles have crossed the extreme north end of the Cronese Mountains, there are several steep trails coming down into the mesquite. The effect has been reduction of most vegetation between the mesquite clumps.

WASH: DESERT WILLOW
(9.75 miles; 118.2 acres)

Plant Communities. Desert Willow Wash is found from the Cronese Valley south along the east side of the Cave Mountains to the Mojave River Wash and from there east along the northern wash edge. Elevations range from 1080 to 1100 feet. In this wash, approximately half the shrubs are desert willow and half mesquite, with a trace of tamarisk. Thurbers and paper plant (Petalonyx Thurberi), cheese bush and four-wing salt bush are found in the wash bottom on the edges of the mesquite hummocks in windblown sand.

Rare Plants. Low elevation washes have one locally rare species, a purslane (Portulaca mundula) and two expected rare species - purple sage (Salvia funerea) and Knapps Bricklebush (Brickellia knappiana).

Wildlife. There are 62 species of vertebrates that occupy the low elevation wash near the Mojave River Wash: 1 possible amphibian, 21 reptiles, 23 birds, and 17 mammals (Tables II-B-I, 2, and 3). Twenty-three species are on the Significant Species Lists (Tables II-B-4, 5, and 6): 9 amphibians and reptiles, 8 birds, and 6 mammals.

The red-spotted toad is a potential inhabitant and may breed in isolated pools in washes after summer thunderstorms. These are limited in numbers due to limited available habitats. Partially protected reptiles include banded gecko, desert iguana, Mojave fringe-toed lizard, leopard lizard, desert horned lizard, and California kingsnake. The Utah black-headed and desert night snake are also here. This habitat type is especially good for the desert iguana and Mojave fringe-toed sand lizard, which are common to abundant in the windblown sand. Significant birds include the mourning dove (game bird), burrowing owl (Blue List of diminishing species), screech owl, broad-tailed hummingbird, California verdin, black-tailed gnatcatcher, and song sparrows - all of which have limited distributions and special habitat requirements. Washes with desert willow are particularly favored by hummingbirds such as the broad-tailed and more common Costa, who feed on the nectar in tubular, pink flowers.

The 7 significant mammals species are the same as those listed for most of the other habitat types: the 2 species of rabbits, the predators (coyote, badger, bobcat, and fully-protected kit fox and burro).

Although not on the List of Significant Species, the long-tailed brush lizard is common here. The desert willow wash is prime habitat for this species which lives in the trees and basks and feeds on insects in branches of willow and tamarisk.

DESERT WILLOW WASH - CLARK MOUNTAIN

Plant Communities.

The second desert willow wash type occurs on the northeast side of Clark Mountain at elevations of 4800 to 5200 feet. The plant community differs markedly from the above. Desert willow dominates the wash. There are scattered shrubs of cat claw, cheesebush, Apache plume (Fallugia paradoxa), woolly brickellia (Brickellia meana), blackbrush (Coleogyne ramosissima), snakeweed (Gutierrezia sp.), and many others. This wash is particularly rich in flora because it lies between the junction of Pinyon-Juniper Woodland and Joshua Tree-Mojave Yucca-Creosote and Cactus communities.

Rare Plants. There are potentially 8 rare species, 24 locally rare species, and 17 expected rare species in the high elevation Desert Willow Wash. These include Alverson cactus, devil's cactus, low greasebush, spiny tipped tongue flower, horsebrush, Barnaby's phacelia, lax-flowered locoweed, Jaeger's Ivesia, Utah Mortonia, New Mexico bahia, long-flowered rabbit brush, desert Eupatorium, slender goldenbush, turpentine brush, Columbia cut-leaf, rock goldenrod, Abert's Santavitalia, spurge, salina wild rye, spike pappus grass, Arizona fescue, muhly, dryland needlegrass, fluff grass, Aven Nelson's phacelia, Heerman's Eriogonum, Cochise lip fern, Rothrock's bedstraw, Yerba Desierto, Thompson's penstemon, Fendler ground cherry, Gooding verbena, Oregon Woodsia, pinyon forget-me-not, beaver tail, Utah daisy, large-flowered dudleya, Fendler three-awn, Yerba Santa, phacelia, plains lemon monarda, evening primrose, Clute's evening primrose, desert bedstraw, purple bird's beak, violet twining snapdragon, lime penstemon, Stephen's penstemon, Mojave Selaginella.

Wildlife.

Wildlife in the Desert Willow Wash of the Clark Mountain is considerably more diverse primarily because of the nature of surrounding habitats. The wash here supports 129 species of wildlife and is second only in diversity to the Pinyon-Juniper Woodland: 27 species amphibians and reptiles, 60 of birds, and 42 of mammals. For significant species, there are 12 of reptiles, 24 of birds, and 12 species of mammals. Among the reptiles, there is one fully protected species, the gila monster, which is very rare in California and is known only from the Providence and Clark Mountains. There are 6 species partially protected by law: banded gecko, leopard lizard, collared lizard, desert horned lizard, California kingsnake, and rosy boa. The collared lizard and rosy boa prefer rocky habitats and are found on the edges of the wash. Other significant reptiles present have limited distribution in the desert (western fence lizard, Gilbert's skink, speckled rattlesnake) or are scarce to rare, due to habitat requirements or other factors (ringneck snake, gila monster, Utah black-headed snake). There are a large number of significant bird species. Seven species on the Blue List of diminishing birds: sharp-shinned hawk, Swainson's hawk, zone-tailed hawk, prairie falcon, bewick wren, least bell vireo, and gray vireo. The raptors also provide special values for non-consumptive recreation. The wash with its narrow rocky walls may also provide perch sites and foraging for the endangered peregrine falcon. Two game birds are present - the Gambel's quail and mourning dove. Other birds are significant because of

limited distribution, special values for science, recreation, and education. These are the flammulated owl, screech owls, broad-tailed hummingbird, Cassin kingbird, Wright flycatcher, pinyon jay, bendire thrasher, crissal thrasher, hermit thrush, blue-gray gnatcatcher, black-tailed gnatcatcher, hooded oriole, and black-headed grosbeak.

There are several new significant mammals in this habitat. One, the spotted bat, was on the list of threatened species of the United States. It may dwell in rocky canyon walls and forage over the wash. There are four fully protected species: kit fox, gila monster, ring-tailed cat, and Nelson bighorn. In addition, the cottontail rabbit, jackrabbit, coyote, gray fox, badger, bobcat, and mountain lion are hunted for sport and pelts.

Existing Habitat Conditions. The Desert Willow Wash on the northeast slopes of Clark Mountain is cut by a dirt road and trails which are used by recreationists and miners. Livestock grazing has affected the shrub composition in the wash; less palatable or nonedible shrubs are common in stands in isolated groups, i.e., woolly Brickellia, cheesebush, and snakeweed.

WASH: ACACIA AND BLACK-BANDED RABBITBRUSH
(5.30 miles; 18.0 acres)

Plant Community. This type is found in the upper portions of Kingston Wash at elevations of 3360 to 3600 feet; it parallels the Excelsior Mine Road on the west for about 5 miles. Wash bottoms contain dense stands of black-banded rabbitbrush (Chrysothamnus paniculatus). Also present are woolly burbush (Franseria eriocentra), cheese bush, four-wing sale bush, and Thurber sandpaper plant. Wash edges have scattered catclaw, desert willow, creosote bush, burrobush (Ambrosia dumosa), and thorn bushes (Lycium sp.). At the northern end of the trail in the wash are dense stands of creosote.

Rare Wildflowers. There is 1 rare species, lax-flowered locoweed (Astragalus nutans), and 5 locally rare species - purslane, Abert's sanvitalia (Sanvitalia abertii), New Mexico bahia (Bahia neomexicanus), and Gooding verbena (Verbena goodingii). There is also an expected rare species, Knapp's bricklebrush.

Wildlife. The Acacia-Black-banded Rabbitbrush Wash type supports 21 species of amphibians and reptiles, 19 of birds and 17 of mammals (Tables II-B-1, 2, and 3). One species of amphibian, 6 of reptiles, 7 of birds, and 7 of mammals are on the Significant Lists (Tables II-B-4, 5, and 6).

The amphibian, the red-spotted toad, may breed in the wash or wash vicinity in temporary pools. Four of the 6 species of reptiles - banded gecko, leopard lizard, desert horned lizard, and California kingsnake - are partially protected by state laws. Two others - the desert night snake and Utah black-headed snake are scarce to rare in the desert. The 7 significant birds include 2 game species, gambel quail and mourning dove, 2 on the Blue List (burrowing owl, bewick wren), and 3 limited in distribution (verdin, black-tailed gnatcatcher, song sparrow). Mammals on the Significant List include the same 6 previously mentioned for other habitats. The wash provides cover necessary for coyote and badger dens.

Existing Habitat Conditions. Heavy rains and thunderstorms have cut the deep, meandering Kingston Wash. However, the black-banded rabbitbrush is well established and forms dense thickets. Many animals use the wash for cover, for food sources, and for shelter. The trees along the wash edge provide nest sites for black-tailed gnatcatchers and verdins and nectar for hummingbirds.

WASH: CHEESE BUSH
(6.85 miles; 47.0 acres)

Plant Community. Cheese Bush Washes vary considerably in composition of vegetation and are found widely scattered throughout the racecourse. They are generally found at elevations of 1080 to 3200 feet.

On the Clark Mountain north and south alternate routes, elevations range from 3250 to 4400 feet. Besides cheese bush, several species of shrubs are common in this wash type. They are woolly brickellia, Nevada joint fir (Ephedra nevadensis), woolly fruited burbush, mountain joint fir (Ephedra viridis), desert alyssum (Lepidium Fremontii), little leaved ratany (Krameria parvifolia), paper bag bush (Salazaria mexicana), and terete-leaved rubber bush (Chrysothamnus teretifolius). Cheese bush washes in the higher elevations at Clark Mountain have more diversity: black brush (Coleogyne ramosissima), Antelope brush (Purshia glandulosa), and Great Basin Sage (Salvia Dorii). Acacia and desert willow also are frequent.

Rare Wildflowers. Low elevation washes have 1 locally rare species, a purslane (Portulaca mundula), and may have 2 expected rare species. The latter species are purple sage and Knapp's Brickellia.

Higher elevation washes may have the same species with the addition of 1 rare plant, the lax-flowered locoweed, and 4 locally rare species, Abert Sanvitalia, New Mexico Bahia, long-flowered rabbitbrush, and Goodings Verbena. Also, upper washes have the rare Alverson cactus (Mammillaria Alversoni).

Wildlife. Wildlife varies according to whether cheese bush washes are of low elevation or on the Clark Mountain at higher elevations. Low elevation cheese bush washes support 23 reptiles, 14 bird species, and 19 mammals species - and have a relatively simple faunal composition. There are only 8 species of significant reptiles, 1 bird species, and 5 mammals species. One of the 8 reptiles, the desert tortoise, is fully protected by state laws and is the State reptile. In addition, 5 species are partially protected by bag limits (banded gecko, desert iguana, leopard lizard, desert horned lizard, and California kingsnake) and 2 (desert night snake and Utah black-headed snake) are rare to scarce. One bird, the burrowing owl, is on the Blue List of diminishing species. The 5 significant mammals species are coyote, kit fox, badger, bobcat, and jackrabbit.

Higher elevation cheese bush washes on the slopes of Clark Mountain have a more diverse fauna, primarily because of associated habitats on wash edges. There are 83 vertebrate species - 24 of reptiles, 26 of birds, and 33 of mammals. There are 10 reptile species, 4 bird species, and 11 mammal species on the Significant Species Lists (Tables II-B-4, 5, and 6). The significant reptiles include banded gecko, leopard lizard, desert horned lizard, rosy boa, and California kingsnake, all of which are partially protected; the western fence lizard, Gilbert's skink, ringneck snake, which are limited in distribution in the desert due to habitat requirements; and the desert night snake and Utah black-headed snake, which are scarce to rare. The rare gila monster, a fully protected species, is also present.

Two game birds are here - gambel quail and mourning dove. The burrowing owl, found in lower portions of the washes, is on the Blue List of diminishing species; the Great Basin hermit thrush has limited

distribution. The 10 species of significant mammals include several hunted for sport or pelts (cottontail rabbit, jackrabbit, coyote, badger, bobcat, and deer), 3 fully-protected species (Nelson bighorn sheep, kit fox, and burro), 1 rare species (spotted bat), and 1 limited in numbers due to position in food chain (long-tailed weasel).

Existing Habitat Conditions. Cheese bush washes, whether of low or high elevations, have had some impact from off-road vehicle activity in the past. Most, if not all of these washes, had fairly continuous distribution of shrubs across the wash at one time. Where vehicle activity has occurred, shrubs have been damaged, and in many cases, destroyed. Some are resprouting from root crowns.

WASH: DESERT ALMOND
(3.7 miles; 7.8 acres)

Plant Community. Desert Almond Washes occur south of Turquoise Mountain, south of Clark Mountain, and on Beer Bottle Pass in Nevada at elevations of 3200 to 5200 feet. Animals of the Desert Almond Wash south of Turquoise Mountain are essentially the same as those at the Joshua Tree and Creosote communities and thus will not be included here.

Typical vegetation includes the Desert Almond (Prunus fasciculata) and acacia as dominant species. Others are cheese bush, woolly-fruited burbush, blackbrush, and juniper (higher elevations). Washes are rocky.

Rare Wildflowers. Desert Almond Washes have at least 4 rare wildflowers: lax-flowered locoweed, Barnaby's Phacelia (Phacelia Barnabyana), horsebrush (Tetradymia argyrea), devil's cactus (Opuntia parishii), and Alverson's cactus. Locally rare species are purslane, Abert's Sanvitalia, New Mexico Bahia, long-flowered rabbitbrush, Gooding's verbena, cochise lip fern (Cheilanthes sinuata cochisensis), Heermann's buckwheat (Eriogonum heermannii var. sulcatum), turpentine brush (Haplopappus laricifolius), rock goldenrod (Petradoria pumila), rabbitbrush (Chrysothamnus depressus) Columbia cut-leaf (Hymenopappus filifolius eriopodus), dry land needle grass (Stipa arida), Fendler ground cherry, and Mortonia (Mortonia utahensis). The expected rare species are purple sage, lime Penstemon (Penstemon calcareus), and Stephen's penstemon (Penstemon stephensii).

The upper portions of the Desert Almond Wash probably have many of the same species found in Pinyon-Juniper Woodland.

Wildlife. Desert Almond Washes support 84 vertebrate species: 26 of reptiles, 34 of birds, and 24 of mammals (Tables II-B-1, 2, and 3). There are 32 significant species: 11 reptile species, 11 bird species, and 10 mammal species (Tables II-B-4, 5, and 6).

Significant reptiles include the fully-protected gila monster (both in California and Nevada); the partially-protected banded gecko, leopard lizard, collared lizard, chuckwalla (lower elevations), desert horned lizard, rosy boa, and California kingsnake; species limited in distribution such as the western fence lizard and Panamint rattlesnake;

and the scarce to rare Utah black-headed snake, desert night snake, and lyre snake.

Significant bird species include such raptors as sharp-shinned hawk, Swainson's hawk, prairie falcon, and peregrine falcon. They are in the endangered, threatened, and Blue List categories. Two game species are present - gambel quail and mourning dove. The bewick wren and mountain song sparrow, both of which are on the Blue List, favor thickets of acacia and desert almond. Other significant birds are the Cassin kingbird, blue-gray gnatcatcher, and black-tailed gnatcatcher, all of which are limited in distribution due to habitat preferences.

There is only one small rodent among the significant mammalian species, the chisel-toothed kangaroo rat. It would occur where blackbrush and Pinyon-Juniper Woodland come in contact with Desert Almond Wash. Predators and game species include long-tailed weasel, mountain lion, coyote, bobcat, and mule deer. The Nelson bighorn sheep and the burro are fully protected.

Existing Habitat Conditions. Desert Almond Wash type has had some impact from off-road vehicle use - reduction in shrubs and cover and widening of open areas in washes.

CREOSOTE BUSH COMMUNITIES (67.95 miles; 3,643 acres)

Plant Communities. Creosote Bush communities vary considerably in composition and diversity. They are found throughout the racecourse from the start to the Las Vegas Valley at elevations of 1000 to 3000 feet. Creosote bush is dominant by aspect. Generally, the predominant species in the understory is burrobrush or four-wing salt bush. Creosote-four-wing salt bush associations are generally found near fringes of playas. Other typical species are cheese bush, joint fir (Ephedra sp.), little-leaved ratany (Krameria parvifolia), thornbushes (Lycium Cooperi, L. Andersoni), galleta grass, Indian rice grass (Oryzopsis hymenoides), mallow (Sphaeralcea ambigua), desert croton (Croton californicus), dicoria (Dicoria canescens), and desert straw (Stephanomeria pauciflora).

Rare Wildflowers. Creosote Bush communities have a number of possible rare species. There are 3 rare species - Mojave indigo bush (Dalea arborescens), lax-flowered locoweed, and devil's cactus; 6 locally rare species - spurge (Euphorbia revoluta), turpentine bush, Coulter psilactis (Psilactis Coulteri), Fendler ground cherry, and small-flowered Androstephium (Androstephium breviflorum).

There are also 13 possible expected rare plants. These include desert poppy (Arctomecon merriami), Thurber's pepper grass (Lepidium thurberi), phacelia (Phacelia mustelina), lime penstemon, Stephen penstemon, violet twining snapdragon (Maurandya antirrhiniflora), Death Valley sage, desert bedstraw (Galium proliferum), Indian mallow (Abutilon parvulum), Mojave Eriophyllum (Eriophyllum Mojavense), large-flowered dudleya (Dudleya saxosa aloides), Clute's evening primrose (Oenothera longissima clutei), evening primrose (O. cavernae), and Death Valley tea (Ephedra funerea).

Wildlife. Creosote Bush communities constitute the largest of the wildlife habitats and support a comparatively large number of species of wildlife, 70 in all. These include 12 lizards, 16 snakes, 1 tortoise, 17 birds, and 24 mammals. Reptiles dominate this community, and 13 significant species of reptiles are found here (Tables II-B-4, 5, and 6). These include the completely protected desert tortoise and the partially protected banded gecko, desert iguana, leopard lizard, collared lizard, desert horned lizard, California kingsnake, desert rosy boa, and Mojave fringe-toed lizard (in areas of fine, loose sand). The Utah black-headed snake, desert night snake, and Sonoran lyre snake are also found in this community, although they are restricted to certain rocky habitats and are relatively uncommon even there. Of the 24 species of mammals, two are fully protected (kit fox) and 4 are hunted for sport and pelts (black-tailed jackrabbit, coyote, badger, and bobcat). There are also 3 significant bird species. These are the chukar and mourning dove, which are important game species. The burrowing owl is on the Blue List of diminishing species. This owl lives in abandoned rodent burrows, old badger burrows, tortoise burrows, and old coyote burrows.

Existing Habitat Conditions. The condition of the creosote bush habitat along the racecourse varies considerably depending on proximity to the start, whether the course traversed existing roads and trails, or whether the course crossed open country. The start of previous courses impacted an area 0.75 mile in width. This narrows in some washes to about 100 feet in width and widens again to 0.5 to 0.75 mile across immediately west of Cronese Lake. Width of the trail in washes may be 30 to 50 feet and on existing roads and trails 6 to 8 feet.

JOSHUA TREE OR MOJAVE YUCCA AND CREOSOTE BUSH - BURROBUSH
COMMUNITIES
(17.0 miles; 38.7 acres)

Plant Community. These plant communities are found both in California and Nevada at elevations of 2800 to 4200 feet in the vicinity of Turquoise Mountain, Shadow Valley, the western and eastern slopes of Clark Mountain, and near Beer Bottle Pass. There are basically two community types: Joshua tree (Yucca brevifolia), - creosote-burrobush; and Mojave yucca (Yucca schidigera) - creosote-burrobush. Other common species in these communities are little-leaved ratany, Nevada joint fir (Ephedra nevadensis), winter fat (Eurotia lanata), Anderson thornbush, galleta grass, needlegrass (Stipa speciosa), fluff grass (Tridens), and Indian rice grass. Cactae are also present in low densities. Some of the more common species are silver cholla (Opuntia echinocarpa), beaver-tail (O. basilaris), Bigelow cholla (O. Bigelovii), and darning needle or pencil cholla (O. ramosissima).

Rare Wildflowers. Joshua Tree Woodland supports 3 rare species - sand linanthus (Linanthus arenicola), lax-flowered locoweed, and devil's cactus. There are 9 locally rare species - cochise lip fern, Mt. pepper grass (Lepidium montanum cinereum), purslane, slender goldenbush, turpentine brush, long-flowered rabbitbrush, Fendler ground cherry, Mortonia, and

Gooding verberna. In addition, there are 9 expected rare species. These include: Mojave selaginella (Selaginella leucobryoides), lime penstemon, violet twining snapdragon, plains lemon monarda (Monarda pectinata), desert bedstraw, beavertail (Opuntia basilaris brachyclada), Knapp's bricklebrush, large-flowered dudleya, and Clute's evening primrose.

Wildlife. A total of 85 species of vertebrates occur within this community (Tables II-B-1, 2, and 3). This includes 24 species of reptiles, 39 species of birds, and 22 species of mammals. Of the 85 species, 26 are considered significant (Table II-B-4, 5, and 6). There are 8 species of significant reptiles, 10 species of birds, and 7 species of mammals.

Significant reptiles include: desert tortoise (fully protected); banded gecko, leopard lizard, chuckwalla, desert horned lizard, California kingsnake, all of which are protected by bag limits; Utah black-headed snake (very restricted and isolated) and desert night snake (restricted habitat).

The Joshua Tree-Creosote Bush community south of Turquoise Mountain and in the vicinity of Spring Wash is good desert tortoise habitat. Population densities are estimated at over 200 tortoises per square mile.

The following birds are significant and are on the Blue List: zone-tailed hawk, prairie falcon, American kestrel, and burrowing owl. All hawks are protected by the State of California and, in addition, the peregrine falcon is considered endangered by the State of California and is on the Federal Endangered Species List. The gambel quail, chukar, and mourning dove are significant because they are hunted species. The bendire thrasher and LeConte thrasher have restricted habitats.

The black-tailed jackrabbit, coyote, and bobcat are hunted for sport and pelts. The desert cottontail and black-tailed jackrabbit are hunted by season and bag limit. The kit fox and burro are fully protected in California.

JOSHUA TREE-MOJAVE YUCCA-CACTUS COMMUNITIES (13.3 miles; 27.7 acres)

Plant Community. The Joshua Tree-Mojave Yucca-Cactus community has the greatest diversity and is the richest of all the floral communities along the racecourse. It is found in the vicinity of Solomon's Knob, surrounding the Clark Mountain, and on Beer Bottle Pass at elevations of 3000 to 5000 feet. By aspect, Joshua Tree, Mojave Yucca, and staghorn cholla (Opuntia acanthicarpa) are dominant. Common cactus species are pencil cholla, silver cholla, Bigelow cholla, beavertail cactus, barrel cactus (Echinocactus acanthodes), cottontop cactus (E. polycephalus), strawberry hedgehog (Echinocereus Engelmanni), and Stanley cholla (Opuntia Stanleyi). The rare Alverson or foxtail cactus and the fringe-flowered nipple cactus (Mamillaria deserti) are also present. Common shrubs include creosote bush, burrobrush, little-leaved ratany, mountain joint fir, and spiny menodora (Menodora spinescens). Grasses are galleta and fluff grass.

Rare Wildflowers. There are at least 4 species of rare wildflowers in this habitat - exalted Laphamia (Laphamia fastigiata), lax-flowered locoweed, devil's cactus, and Alverson's cactus. Locally rare species include cochise lip fern, Mt. peppergrass, Aven Nelson's Placelia (Phacelia anelsoni), turpentine brush, long-flowered rabbitbrush, Fendler ground cherry, Mortonia, and Gooding verbena.

The expected rare species include Mojave selaginella, lime penstemon, Armargosa penstemon (Penstemon fructiformis armargosae), plains lemon monarda, desert bedstraw, beavertail, cima locoweed (Astragalus cimae), large-flowered Dudleya, and Clute's evening primrose.

Wildlife. This habitat supports a diverse and unusual fauna. There are 104 species present: 27 reptiles, 41 birds, and 36 of mammals (Tables II-B-1, 2, and 3). Of these, 39 are significant species.

Significant reptiles include the desert tortoise, which is fully protected by state laws. It lives at lower elevations in the tree-yucca-cactus type. Another fully protected and rare species is the gila monster, which favors rocky areas with washes. Seven species of reptiles are partially protected by state laws: banded gecko, chuckwalla, leopard lizard, collared lizard, desert horned lizard, rosy boa, and California kingsnake. The collared lizard, rosy boa, and chuckwalla prefer rocky sites. Two species of snakes are limited in distribution due to habitat preferences, the speckled rattlesnake and the rare Sonoran lyre snake; 2 others occur in many habitats in the desert but are scarce to rare.

The bird fauna in this habitat is exceptionally diverse. There are 15 species of significant birds. Six, the sharp-shinned hawk, Swainson's hawk, zone-tailed hawk, prairie falcon, American kestrel, and gray vireo are on the Blue List of diminishing species. Rocky canyons and outcrops provide nesting and roosting sites for raptors and the rare and endangered peregrine falcon. Two species of game birds, gambel quail and mourning dove, provide consumptive recreational use. Six other birds have limited distribution - Sagauro screech owl, Mearn's gilded flicker, northern cassin kingbird, dotted canyon wren, bendire thrasher, and orioles. In addition, there are good breeding populations of ash-throated flycatchers, Scott's orioles, ladder-backed woodpeckers, and cactus wrens.

There are 11 species of significant mammals. The very rare spotted bat lives in cliffs and rocks. The desert cottontail, black-tailed jackrabbit, coyote, badger, and bobcat provide consumptive recreation for sport and pelts. The mountain lion also provides hunting. Four species are fully protected by state or Federal laws: Nelson bighorn, kit fox, burro, and ringtail cat. Nelson bighorns are known to occur on the slopes of Clark Mountain.

Existing Habitat Conditions. The vegetation is dense with cactus and tree yuccas. It has been grazed by livestock, and such grasses as galleta and rice grass are heavily cropped. Winter fat, joint fir, and other shrubs show signs of heavy grazing. Most motorcycle activity has

occurred on roads in this habitat. The exceptions are: a trail joining Excelsior Mine Road with Kingston Wash and trails through and along limestone washes and cross-country at the southwest base of Clark Mountain.

BLACKBRUSH COMMUNITIES
(5.50 miles; 14.3 acres)

Plant Communities. The blackbrush plant community occurs on the slopes of Clark Mountain at elevations of 4000 to 5000 feet. Blackbrush is the most common species. Others are spiny mendora, California buckwheat, joint fir, and desert rue (Thamnosoma montana). There are few tree yuccas and cactae. The Stanley cholla, Alverson foxtail, and fringe-flowered nipple cactus are frequent. Washes contain acacia, snakeweed, spear-leaved Brickellia (Brickellia arguta), and terete-leaved rubberbrush (Chrysothamnus teretifolius).

Rare Wildflowers. Rare wildflowers found in this community are probably the same as those in Joshua Tree-Mojave Yucca-Cactus community and in the Pinyon-Juniper Woodland.

Wildlife. A total of 89 species of vertebrate wildlife occur here. Included in this total are 35 species considered to be significant. There are 10 significant species of reptiles. The following are protected by bag limits: banded gecko, leopard lizard, collared lizard, desert horned lizard, and California kingsnake. The ringneck snake occurs in the desert in the Providence Mountains and possibly on Clark Mountain. Populations are isolated and habitat is restricted to moist sites. The ringneck snake, Utah black-headed snake, night snake, and the speckled rattlesnake are generally restricted to rocky areas and populations are isolated.

Eleven species of birds are considered significant. The following raptors occur here: sharp-shinned hawk, Swainson's hawk, zone-tailed hawk, prairie falcon, peregrine falcon, and American kestrel. All raptors are protected by state law. In addition, the peregrine falcon is listed as Endangered by the Federal Government and by the California Department of Fish and Game.

The sharp-shinned, Swainson's, and zone-tailed hawks and the American kestrel are on the Blue List. Two game birds, the gambel quail and the mourning dove, are hunted. The crissal thrasher, blue-gray gnatcatcher, and the gray vireo all occur in restricted habitats in the blackbrush community. The gray vireo is also on the Blue List of diminishing birds.

Significant mammal species total 15. The spotted bat is very rare and low in numbers. The desert cottontail, black-tailed jackrabbit, gray fox, badger, mountain lion, bobcat, and mule deer are partially protected and have sport-hunting values. The kit fox, ringtail cat, and Nelson bighorn sheep are fully protected by state law. Species occurring in restricted habitats and few in numbers are the Panamint chipmunk, rock squirrel, chisel-toothed kangaroo rat, porcupine, raccoon, long-tailed weasel, mule deer, and Nelson bighorn sheep. Recently, the burro

has become a fully protected species under Federal regulations.

Existing Habitat Conditions. Blackbrush communities are and have been grazed by livestock. Grasses such as galleta and Indian rice grass are heavily cropped. Such shrubs as spiny menodora, joint fir, and winter fat are also utilized.

PINYON-JUNIPER WOODLAND
(3.0 miles; 5.5 acres)

Plant Community. Pinyon-Juniper Woodland occurs at elevations of 4800 to 5200 feet on Clark Mountain over 3 miles of alternate race-course route. The dominant vegetation is pinyon pine (Pinus monophylla), juniper (Juniperus osteosperma), squaw bush (Rhus trilobata), desert almond, big sagebrush (Artemesia tridentata), spiny menodora, Great Basin sage, Heermann's buckwheat, bitter or antelope brush, apache plume (Fallugia paradoxa), and Utah agave (Agave utahensis).

There are a great variety of plant species here and between Pinyon-Juniper Woodland and the Joshua Tree-Mojave Yucca and Cactus communities. Species include blackbrush, bitterbrush, apache plume, terete-leaved rubberbush, black-banded rabbitbrush, desert Brickellia (Brickellia desertorum), desert Baccharis (Baccharis sergiloides), squawbush, desert rue, and snakeweed. There is some juniper and Spanish dagger (Yucca baccata) as well as numerous species of grasses such as Bouteloua, Poa, Muhlenbergia, Stipa, and Oryzopsis.

Rare Wildflowers. Pinyon-Juniper Woodland and associated washes with limestone have a great variety of rare wildflower species. There are at least 7 species of rare wildflowers: Barnaby's Phacelia, Jaeger's Ivesia (Ivesia jaegeri), spiny-tipped tongue flower (Forsellesia pungens), low grease bush (Forsellesia pungens glabra), horse brush, exalted laphamia, and lax-flowered locoweed.

Locally rare species include: cochise lip fern, Mt. pepper-grass, Heermann's buckwheat, Aven Nelson's phacelia, Thompson's Penstemon, Yerba Desierto (Fenderella utahensis), caespitose evening primrose (Oenothera caespitosa crinita), Rothrock's bedstraw (Galium wrightii rothrockii), Abert's sanvitalia, New Mexico Bahia, turpentine brush, rock goldenrod, long-flowered rabbitbrush, Columbia cut leaf, desert eupatorium (Eupatorium herbaceum), Arizona fescue (Festuca arizonica), fluff grass (Tridens pilosus), spike pappus grass (Enneapogon desvauxii), saline wild rye (Elymus salinus), muhly (Muhlenbergia arsenei), dryland needle-grass (Stipa arida), Fendler ground cherry, and Gooding verbenia.

There are 17 expected rare species: Mojave selaginella, Oregon Woodsia (Woodsia oregana), Whitlow grass (Draba cuneifolia), capitate sandwort (Arenaria congesta charlestonensis), umbrella wort (Oxybaphus comazus), Yerba Santa (Eriodictyon angustifolium), lime penstemon, plain's lemon monarda, purple bird's beak (Cordylanthus parviflorus), pinyon-forget-me-not (Cryptantha tumulosa), prairie clover (Petalostemon searlsiae),

fendler three-awn (Aristida Fendleriana), large-flowered dudleya, cinquefoil (Potentilla patellifera), oak (Quercus turbinella), Garrett's California fuchsia (Zauschneria garrettii), and Clute's evening primrose.

Wildlife. Pinyon-Juniper Woodland has the most diverse fauna of all the habitats. There are 134 species - 17 of reptiles, 73 of birds, and 48 of mammals. Of these, there are 52 significant species - 9 reptiles, 32 birds, and 16 mammals. The 9 significant species include 4 species partially protected by state law: banded gecko, collared lizard, desert horned lizard, and California kingsnake. Two species, the speckled rattlesnake and the ringneck snake, have limited distribution and favor rock outcrops. Two others, the black-headed snake and desert night snake, occur widely but are uncommon to rare.

There are 28 significant species of birds - the sharp-shinned hawk, Swainson's hawk, zone-tailed hawk, prairie falcon, American kestrel, and bewick wren are on the Blue List of diminishing species; the peregrine falcon is on the Federal endangered list. Two species are game birds - gambel quail and mourning dove. Others are limited in distribution and habitat preferences and are of value to science and for nonconsumptive recreation: flammulated owl, screech owl, broad-tailed hummingbird, Lewis woodpecker, white-breasted hairy woodpecker, cassin kingbird, Wright flycatcher, pinyon jay, Providence Mountains bushtit, dotted canyon wren, crissal thrasher, Great Basin hermit thrush, blue-gray gnatcatcher, ruby-crowned kinglet, Virginia warbler, hooded oriole, Rocky Mountain black-headed grosbeak, and lazuli bunting. Several of these live only in the Pinyon-Juniper community and as such represent an island community in the desert.

There are 15 species of significant mammals. One species, the spotted bat, is extremely rare. The desert cottontail, jackrabbit, mule deer, bobcat, mountain lion, badger, raccoon, gray fox, and coyote are hunted for pelts and for sport. Three species, the ringtail cat, burro, and Nelson bighorn sheep, are fully protected. Others, such as the rock squirrel, Panamint chipmunk, long-tailed weasel, and porcupine are limited in distribution due to habitat requirements.

Existing Habitat Conditions. Approximately 2 miles of course traverse steep, narrow washes and rocky terrain on the southeastern side of Clark Mountain. The washes may have been used on one or two previous races. The rest of the course is on old mining roads or trails.

PACHALKA SPRING

Plant Community. Pachalka Spring is on the west slope of Clark Mountain at an elevation of 4940 feet in blackbrush plant community. The habitat and flora in the vicinity of the spring differ considerably from that of surrounding slopes. Introduced trees such as apricot, apple, elderberry (Sambucus sp.), and catalpa grow at the spring. Acacia with four-wing salt bush, jimson weed (Datura meteloides), and snakeweed are common adjacent to the spring. Gullies filled with acacia thickets are also common.

Rare Wildflowers. Rare wildflowers of the Springs are probably similar to those in the Joshua Tree-Mojave Yucca-Cactus community and Pinyon-Juniper Woodland. Species favoring limestone may also be in the vicinity of the limestone springs. Pachalka Spring supports at least 98 species of resident vertebrates and many more species of migrating and winter-visiting birds. There are 3 species of amphibians, 15 of reptiles, 14 of birds, and 39 of mammals. Thirty-six are on Significant Species Lists - 9 reptiles and amphibians, 15 species of birds, and 12 of mammals. The red-spotted toad and Pacific treefrog are found at the spring. Both occur at isolated desert springs. Two reptile species, the banded gecko and the California kingsnake, are partially protected by state law. Others, such as the Gilbert's skink and ringneck snake occur in isolated parts of the desert. The speckled rattlesnake is limited in numbers due to habitat preferences. Two, the Utah black-headed snake and desert night snake, are distributed widely throughout the desert, but are scarce to rare.

Fifteen species of significant birds are found at the spring. Two are game birds, the gambel quail and mourning dove. Some are limited in numbers due to habitat requirements - flammulated owl, screech owl, Wright's flycatcher, dotted canyon wren, hooded oriole, Rocky Mountain black-headed grosbeak, and lazuli bunting. The desert bewick wren, least bell vireo, and gray vireo are on the Blue List of diminishing species.

There are 12 species of significant mammals. Many bats drink at the spring; it is likely that the rare spotted bat is one of these. Desert cottontail, jackrabbits, coyote, raccoon, badger, long-tailed weasel, bobcat, and mountain lion - all species hunted for pelts or sport - live in the vicinity. The fully protected kit fox, Nelson bighorn, and ringtail cat are also resident species.

Existing Habitat Condition. Livestock and burro use of the spring has been heavy. Shrubs and grasses show signs of heavy cropping and trampling. Exotic trees, grasses, and annuals have been introduced, i.e., fruit trees, blackberry bushes, and catalpa.

CRUCIFIXION THORN
(.25 mile; 1.0 acre)

Plant Community. There is a grove of crucifixion thorn trees (*Castela/Holacantha emoryi*) on a playa in the hills north of Cady Mountains in San Bernardino County at an elevation of 1850 feet (T. 12 N., R. 5 E., Sec. 28, SBM).

The crucifixion thorn trees dominate the flora of the playa. Other shrubs include large creosote bushes, cheese bush, mountain joint fir, and woolly Brickellia.

Rare Wildflowers. The crucifixion thorn tree is uncommon to rare in California. It occurs at scattered localities such as Ludlow, Daggett, Amboy, Goffs, and in the Yuha Basin (Munz, 1974). This particular grove is lush and the trees appear to be healthy (at least much more so than those in a protected site in the Yuha Basin). Other rare plants may be similar to those in Alkali Sink - Lake Edge and Alkali Sink - Mesquite communities.

TABLE 11-8-1

Habitat Preferences of Amphibians and Reptiles
of the Barstow-Las Vegas Race Course

HABITAT TYPES

COMMON AND SCIENTIFIC NAMES																COMMENTS
	Alkali Sink-Lake Edge	Alkali Sink with Mesquite	Wash: Desert Willow	Wash: Desert Willow (Clark Mtn)	Wash: Acacia - Rabbit Brush	Wash: Cheese Bush (Low)	Wash: Cheese Bush (High)	Wash: Desert Almond	Creosote Bush Communities	Joshua Tree-Creosote or Mojave Yucca-Cactus	Joshua Tree-Mojave Yucca-Cactus	Blackbrush Communities	Pinyon Juniper Woodland	Patchalaka Spring	Crucifixion Thorn	
Red-spotted Toad (<u>Bufo punctatus</u>)			X		X									X		
Pacific Treefrog (<u>Hyla regilla</u>)		X												X		
Desert Tortoise (<u>Gopherus agassizi</u>)						X			X	X	X					
Banded Gecko (<u>Coleonyx variegatus</u>)		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Desert Night Lizard (<u>Xantusia vigilis</u>)										X	X					Uncommon in Creosote
Desert Iguana (<u>Dipsosaurus dorsalis</u>)		X	X			X			X							
Chuckwalla (<u>Sauromalus obesus</u>)								X	X	X	X					
Zebra-tailed Lizard (<u>Callisaurus draconoides</u>)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Mojave Fringe-toed Lizard (<u>Uma scoparia</u>)		X	X						X							Requires wind-blown sand
Long-nosed Leopard Lizard (<u>Crotaphytus w. wislizenii</u>)		X	X	X	X	X	X	X	X	X	X	X			X	
Collared Lizard (<u>Crotaphytus collaris</u>)				X			X	X	X	X	X	X	X			Rocks & Canyons
Desert Spiny Lizard (<u>Sceloporus magister</u>)		X	X	X	X	X	X			X	X				X	
Western Fence Lizard (<u>Sceloporus occidentalis</u>)				X			X	X				X	X			

TABLE 11-8-1 CONTINUED
Amphibians and Reptiles Along
The Barstow to Las Vegas Race Course

HABITAT TYPES

COMMON AND SCIENTIFIC NAMES																	COMMENTS
		Alkali Sink-Lake Edge	Alkali Sink with Mesquite	Wash: Desert Willow	Wash: Desert Willow (Clark Mtn)	Wash: Acacia - Rabbit Brush	Wash: Cheese Bush (Low)	Wash: Cheese Bush (High)	Wash: Desert Almond	Creosote Bush Communities	Joshua Tree-Creosote or Mojave Yucca-Creosote	Joshua Tree-Mojave Yucca-Cactus	Blackbrush Communities	Pinyon Juniper Woodland	Palchalka Spring	Crucifixion Thorn	
Long-tailed Brush Lizard (<u>Urosaurus graciosus</u>)				X	X	X											
Side-blotched Lizard (<u>Uta stansburiana</u>)	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X
Desert Horned Lizard (<u>Phrynosoma platyrhinos</u>)	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X
Gilbert's Skink (<u>Eumeces gilberti</u>)				X			X								X		
Western Whiptail (<u>Cnemidophorus tigris</u>)	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X
Gila Monster (<u>Heloderma suspectum</u>)				X					X			X					
Western Blind Snake (<u>Leptotyphlops humilis</u>)				X	X	X	X	X	X	X		X	X	X		X	Rocks
Desert Rosy Boa (<u>Lichanura trivirgata gracia</u>)				X	X			X	X	X		X					
Ringneck Snake (<u>Diadophis punctatus</u>)				X			X	X	X				X	X	X		Moist areas
Spotted Leaf-nosed Snake (<u>Phyllorhynchus decurtatus</u>)			X		X	X	X			X		X					
Coachwhip Snake (<u>Masticophis flagellum</u>)	X	X	X	X	X	X	X	X	X	X	X	X			X	X	
Striped Whipsnake (<u>Masticophis taeniatus</u>)				X			X	X	X			X	X	X			
Western Patch-nosed Snake (<u>Salvadora hexalepis</u>)	X	X	X		X	X	X		X	X		X				X	

TABLE II-B-1 CONCLUSION

HABITAT TYPES

COMMON AND SCIENTIFIC NAMES	Alkali Sink-Lake Edge	Alkali Sink With Mesquite	Wash: Desert Willow	Wash: Desert Willow (Clark Mtn)	Wash: Acacia - Rabbit Brush	Wash: Cheese Bush (Low)	Wash: Cheese Bush (High)	Wash: Desert Almond	Creosote Bush Communities	Joshua Tree-Creosote or Mojave Yucca-Cactus	Joshua Tree-Mojave Yucca-Cactus	Blackbrush Communities	Pinyon Juniper Woodland	Palchaika Spring	Crucifixion Thorn	COMMENTS	
Gopher Snake (<u>Pituophis melanoleucus</u>)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Glossy Snake (<u>Arizona elegans</u>)	X	X	X	X	X	X	X	X	X	X	X	X	X		X		
Common Kingsnake (<u>Lampropeltis getulus</u>)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Long-nosed Snake (<u>Rhinocheilus lecontei</u>)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Western Ground Snake (<u>Sonora semiannulata</u>)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Western Shovel-nosed Snake (<u>Chionactis occipitalis</u>)		X	X	X	X	X	X	X	X	X	X	X			X		
Utah Jack-headed Snake (<u>Tantilla planiceps utahensis</u>)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Desert Night Snake (<u>Hypsiglena torquata deserticola</u>)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Sonora Lyre Snake (<u>Trimorphodon lambda</u>)								X	X		X					Rocks & Canyons	
Sidewinder (<u>Crotalus cerastes</u>)	X	X			X	X			X	X							
Speckled Rattlesnake (<u>Crotalus mitchelli</u>)				X			X	X			X	X	X	X			
Mojave Rattlesnake (<u>Crotalus scutulatus</u>)				X	X	X		X	X	X							

TABLE II-B-2 CONTINUED

HABITAT TYPES

COMMON AND SCIENTIFIC NAMES																COMMENTS
Alkali Sink-Lake Edge	Alkali Sink with Mesquite	Wash: Desert Willow	Wash: Desert Willow (Clark Mtn)	Wash: Acacia - Rabbit Brush	Wash: Cheese Bush (Low)	Wash: Cheese Bush (High)	Wash: Desert Almond	Creosote Bush Communities	Joshua Tree-Creosote or Mojave Yucca-Creosote	Joshua Tree-Mojave Yucca-Cactus	Blackbrush Communities	Pinyon Juniper Woodland	Palchaika Spring	Crucifixion Thorn		
Sora Rail (<u>porzana carolina</u>)													X			
Killdeer (<u>Charadrius vociferus</u>)	X								X	X						
Mountain Plover (<u>Eupoda montana</u>)	X								X	X						
Solitary Sandpiper (<u>Tringa solitaria</u>)														X		
Common Snipe (<u>capella gallinago</u>)													X			
Wilson Phalarope (<u>Steganopus tricolor</u>)													X			
California Gull (<u>Larus californicus</u>)		X							X	X			X			
Mourning Dove (<u>Zenaidura macroura</u>)		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Roadrunner (<u>Geococcyx californianus</u>)	X	X	X	X	X	X	X	X	X	X	X		X	X		
Flammulated Owl (<u>Otus flammeolus</u>)				X								X	X		Fir Forest	
Mexican Screech Owl (<u>Otus asio cineraceus</u>)				X								X	X			
Sahuaro Screech Owl (<u>Otis asio gilmani</u>)		X								X		X	X			
Great Horned Owl (<u>Bubo virginianus</u>)										X	X	X	X			

TABLE 11-B-2 CONTINUED

HABITAT TYPES

COMMON AND SCIENTIFIC NAMES		HABITAT TYPES													COMMENTS		
		Alkali Sink-Lake Edge	Alkali Sink with Mesquite	Wash: Desert Willow	Wash: Desert Willow (Clark Mtn)	Wash: Acacia - Rabbit Brush	Wash: Cheese Bush (Low)	Wash: Cheese Bush (High)	Wash: Desert Almond	Creosote Bush Communities	Joshua Tree-Creosote or Mojave Yucca-Creosote	Joshua Tree-Mojave Yucca-Cactus	Blackbrush Communities	Pinyon Juniper Woodland	Palchalka Spring	Crucifixion Thorn	
Burrowing Owl (<u>Speotyto cunicularia</u>)			X	X		X	X	X		X	X						
Long-eared Owl (<u>Asio - otus</u>)														X	X		
Lesser Night Hawk (<u>Chordeiles acutipennis</u>)		X		X	X		X	X	X	X	X	X					
Poorwill (<u>Phalaenoptilus nuttallii</u>)		X		X			X	X	X	X	X						
White-throated Swift (<u>Aeronautes saxatilis</u>)												X	X	X			Rocky Canyons
Costa Hummingbird (<u>Calypte costae</u>)				X	X						X	X					
Anna Hummingbird (<u>Calypte anna</u>)					X									X			
Broad-tailed Hummingbird (<u>Selasphorus platycercus</u>)														X			
Mearns Gilded Flicker (<u>Colaptes auratus</u>)											X						
Lewis Woodpecker (<u>Asyndesmus lewis</u>)														X			
Red-naped Yellow-bellied Sapsucker (<u>Sphyrapicus varius nuchalis</u>)			X												X		
White-breasted Hairy Woodpecker (<u>Dendrocopos villosus leucothoractis</u>)														X			
Cactus Ladder-backed Woodpecker (<u>Dendrocopos scalaris cactophilus</u>)				X							X	X		X			
			</														

TABLE 11-B-2 CONTINUED

HABITAT TYPES

COMMON AND SCIENTIFIC NAMES	Alkali Sink-Lake Edge	Alkali Sink with Mesquite	Wash: Desert Willow	Wash: Desert Willow (Clark Mtn)	Wash: Acacia - Rabbit Brush	Wash: Cheese Bush (Low)	Wash: Cheese Bush (High)	Wash: Desert Almond	Cresote Bush Communities	Joshua Tree-Cresote or Mojave Yucca-Cresote	Joshua Tree-Mojave Yucca-Cactus	Blackbrush Communities	Pinyon Juniper Woodland	Palchalka Spring	Crucifixion Thorn	COMMENTS
Western Kingbird (<u>Tyrannus verticalis</u>)		X	X	X			X	X		X			X			
Cassin Kingbird (<u>Tyrannus vociferans</u>)				X							X		X			
Ash-throated Flycatcher (<u>Myiarchus cinerascens</u>)		X	X	X			X	X		X	X		X	X		
Say Phoebe (<u>Sayornis saya</u>)		X	X		X	X	X	X		X	X					
Wright Flycatcher (<u>Empidonax wrightii</u>)				X									X			
Willow Flycatcher (<u>Empidonax traillii</u>)				X										X		
Gray Flycatcher (<u>Empidonax griseus</u>)				X								X	X	X		
Western Wood Peewee (<u>Contopus sordidulus</u>)													X	X		
Desert Horned Lark (<u>Eremophila alpestris leucolaema</u>)	X	X				X			X	X						
Salt Lake Horned Lark (<u>Eremophila alpestris utahensis</u>)	X	X				X			X	X						
Mojave Horned Lark (<u>Eremophila alpestris ammophila</u>)	X	X				X			X	X						
Yuma Horned Lark (<u>Eremophila alpestris leucansiptila</u>)	X	X				X			X	X						
Tree Swallow (<u>Iridoprocne bicolor</u>)														X		
Violet Green Swallow (<u>Tachycineta thalassina</u>)				X									X			Canyons, rocks
Scrub Jay (<u>Aphelocoma coerulescens</u>)				X			X						X	X		

TABLE 11-B-2 CONTINUED

Birds

HABITAT TYPES

COMMON AND SCIENTIFIC NAMES																	COMMENTS
		Alkali Sink-Lake Edge	Alkali Sink with Mesquite	Wash: Desert Willow	Wash: Desert Willow (Clark Mtn)	Wash: Acacia - Rabbit Brush	Wash: Cheese Bush (Low)	Wash: Cheese Bush (High)	Wash: Desert Almond	Creosote Bush Communities	Joshua Tree-Creosote or Mojave Yucca-Creosote	Joshua Tree-Mojave Yucca-Cactus	Blackbrush Communities	Pinyon Juniper Woodland	Palchalka Spring	Crucifixion Thorn	
Common Raven (<i>Corvus corax</i>)			X	X	X	X	X	X	X	X	X	X		X	X	X	
Pinyon Jay (<i>Gymnorhinus cyanocephalus</i>)						X				X				X			
InyoMountain Chickadee (<i>Parus gambeli inyoensis</i>)														X			
Gray Plain Titmouse (<i>Parus inornatus ridgwayi</i>)														X			
Verdin (<i>Auriparus flaviceps</i>)			X	X		X											
Providence Mountains Bushtit (<i>Psaltiparus minimus providentialis</i>)														X			
Red-Breasted Nuthatch (<i>Sitta canadensis</i>)														X			
Desert Bewick Wren (<i>Thryomanes bewickii eremophilus</i>)			X		X	X			X					X	X		
Northern Cactus Wren (<i>Helcodytes grunneicapillus</i>)			X								X	X					Steep canyon rocks
Dotted Canyon Wren (<i>Catherpes mexicanus conspersus</i>)												X		X	X		
Northern Rock Wren (<i>Salpinctis obsoletes obsoletus</i>)					X			X	X	X	X	X	X				Rocks Canyons
Mocking bird (<i>Mimus polyglottos</i>)		X	X	X	X	X			X		X	X					
Sage Thrasher (<i>Oreoscoptes montanus</i>)					X				X		X	X	X	X			

TABLE 11-B-2 CONTINUED

HABITAT TYPES

COMMON AND SCIENTIFIC NAMES																COMMENTS									
Birds																									
Bendire Thrasher (<u>Toxostoma bendirei</u>)																									
Le Conte Thrasher (<u>Toxostoma lecontei</u>)																									
Crissal Thrasher (<u>Toxostoma dorsale</u>)																									
Alaska Hermit Thrush (<u>Catharus guttatus guttatus</u>)																									
Great Basin Hermit Thrush (<u>Catharus guttatus polionota</u>)																									
Rocky Mtn Swainson Thrush (<u>Catharus ustulatus almae</u>)																									
Western Mexican Bluebird (<u>Sialia mexicana occidentalis</u>)																									
Chestnut-backed Mexican bluebird (<u>Sialia mexicana bairdi</u>)																									
Mountain Bluebird (<u>Sialia currucoides</u>)																									
Townsend Solitaire (<u>Myadestes townsendi</u>)																									
Western Blue-gray Gnatcatcher (<u>Polioptila caerulea</u> (amoenissima))																									
Sonora Black-tailed Gnatcatcher (<u>Polioptila melanura</u> (lucida))																									
Western Ruby-crowned Kinglet (<u>Regulus calendula cinerascens</u>)																									

Birds

HABITAT TYPES

[illegible]

HABITAT TYPES

[illegible]

HABITAT TYPES

I-41

TABLE 11-B-3
Habitat Preferences of Mammals Along the
Barstow-Las Vegas Race Course

HABITAT TYPES

COMMON AND SCIENTIFIC NAMES	HABITAT TYPES															COMMENTS
	Alkali Sink-Lake Edge	Alkali Sink with Mesquite	Wash: Desert Willow	Wash: Desert Willow (Clark Mtn)	Wash: Acacia - Rabbit Brush	Wash: Cheese Bush (Low)	Wash: Cheese Bush (High)	Wash: Desert Almond	Creosote Bush Communities	Joshua Tree-Creosote or Mojave Yucca-Creosote	Joshua Tree-Mojave Yucca-Cactus	Blackbrush Communities	Pinyon Juniper Woodland	Palchaika Spring	Crucifixion Thorn	
Crawford's Desert Shrew (<u>Notiosorex crawfordi</u>)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
California Leaf-nosed Bat (<u>Macrotus californicus</u>)				X			X				X	X	X	X		
Little Brown Myotis (<u>Myotis lucifugus</u>)				X			X						X	X		
Yuma Myotis (<u>Myotis yumanensis</u>)		X		X			X				X	X	X	X		
Long-eared Myotis (<u>Myotis evotis</u>)				X			X				X	X	X	X		
Fringed Myotis (<u>Myotis thysanodes</u>)				X			X				X	X	X	X		
Long-legged Myotis (<u>Myotis volans</u>)				X			X				X	X	X	X		
California Myotis (<u>Myotis californicus</u>)				X			X		X	X	X	X	X	X		
Small-footed Myotis (<u>Myotis subulatus</u>)				X			X					X	X	X		
Silver-haired Bat (<u>Lasionycteris noctivagans</u>)				X			X							X		
Western Pipistrelle (<u>Pipistrellus hesperus</u>)				X			X		X	X	X	X	X	X		
Big Brown Bat (<u>Eptesicus fuscus</u>)				X			X				X	X	X	X		
Red Bat (<u>Lasiurus borealis</u>)				X								X	X	X		

* Steep Canyon walls; boulders; rock out-crops; mines; large trees; old buildings.

Table II-B-3 (cont.)

Mammals

HABITAT TYPES

COMMON AND SCIENTIFIC NAMES		Alkali Sink-Lake Edge	Alkali Sink with Mesquite	Wash: Desert Willow	Wash: Desert Willow (Clark Mtn)	Wash: Acacia - Rabbit Brush	Wash: Cheese Bush (Low)	Wash: Cheese Bush (High)	Wash: Desert Almond	Creosote Bush Communities	Joshua Tree-Creosote or Mojave Yucca-Creosote	Joshua Tree-Mojave Yucca-Cactus	Blackbrush Communities	Pinyon Juniper Woodland	Palchalka Spring	Crucifixion Thorn	COMMENTS
Hoary Bat (<u>Lasiurus cinereus</u>)					X			X		X			X	X	X		
Spotted Bat (<u>Eudema maculatum</u>)					X			X				X	X	X	X		
Townsend's Big-eared Bat (<u>Corynorhinus townsendi</u>)					X			X				X	X	X	X		
Pallid Bat (<u>Antrozous pallidus</u>)					X			X				X	X	X	X		All habitats: buildings
Brazilian Free-tailed Bat (<u>Tadarida brasiliensis</u>)							X										
Big Free-tailed Bat (<u>Tadarida molossa</u>)					X			X				X	X	X	X		
Desert Cottontail (<u>Sylvilagus audubonii</u>)			X	X	X	X		X	X		X	X	X	X	X	X	
Black-tailed Jackrabbit (<u>Lepus californicus</u>)		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Panamint Chipmunk (<u>Eutamias panamintinus</u>)													X	X			
White-tailed Antelope Squirrel (<u>Ammospermophilus leucurus</u>)		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Rock Squirrel (<u>Spermophilus variegatus</u>)														X			
Round-tailed Ground Squirrel (<u>Spermophilus tereticaudus</u>)		X	X	X		X	X			X							
Southern Pocket Gopher (<u>Thomomys bottae</u>)		X	X			X	X	X	X	X	X	X	X	X	X	X	

Table II-B-3 (cont.)

Mammals

HABITAT TYPES

COMMON AND SCIENTIFIC NAMES	Alkali Sink-Lake Edge	Alkali Sink with Mesquite	Wash: Desert Willow	Wash: Desert Willow (Clark Mtn)	Wash: Acacia - Rabbit Brush	Wash: Cheese Bush (Low)	Wash: Cheese Bush (High)	Wash: Desert Almond	Creosote Bush Communities	Joshua Tree-Creosote or Mojave Yucca-Cactus	Joshua Tree-Mojave Yucca-Cactus	Blackbrush Communities	Pinyon Juniper Woodland	Palchaika Spring	Crucifixion Thorn	COMMENTS
Little Pocket Mouse (<u>Perognathus longimembris</u>)		X	X	X	X	X	X	X	X	X	X	X	X	X	X	Soil preference
Great Basin Pocket Mouse (<u>Perognathus parvus</u>)							X					X	X	X		Soil preference
Long-tailed Pocket Mouse (<u>Perognathus formosus</u>)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Soil preference
Desert Pocket Mouse (<u>Perognathus penicillatus</u>)						X			X	X	X					Soil preference
Chisel-toothed Kangaroo Rat (<u>Dipodomys microps</u>)	X							X				X				Soil preference
Merriam's Kangaroo Rat (<u>Dipodomys merriami</u>)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Soil preference
Desert Kangaroo Rat (<u>Dipodomys deserti</u>)		X	X						X	X	X					Soil preference
Panamint Kangaroo Rat (<u>Dipodomys panamintinus</u>)				X											X	
Western Harvest Mouse (<u>Reithrodontomys megalotis</u>)																
Canyon Mouse (<u>Peromyscus crinitus</u>)				X		X	X	X	X	X	X	X	X			Rocks
Cactus Mouse (<u>Peromyscus eremicus</u>)		X		X	X		X	X				X	X			
Deer Mouse (<u>Peromyscus maniculatus</u>)		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brush Mouse (<u>Peromyscus boylii</u>)				X							X	X	X			

Table II-B-3 (cont.)

Mammals

HABITAT TYPES

COMMON AND SCIENTIFIC NAMES		Alkali Sink-Lake Edge	Alkali Sink with Mesquite	Wash: Desert Willow	Wash: Desert Willow (Clark Mtn)	Wash: Acacia - Rabbit Brush	Wash: Cheese Bush (Low)	Wash: Cheese Bush (High)	Wash: Desert Almond	Creosote Bush Communities	Joshua Tree-Creosote or Mojave Yucca-Creosote	Joshua Tree-Mojave Yucca-Cactus	Blackbrush Communities	Pinyon Juniper Woodland	Palchalka Spring	Crucifixion Thorn	COMMENTS
Pinyon Mouse (<u>Peromyscus truei</u>)					X			X					X	X			
Southern Grasshopper Mouse (<u>Onychomys torridus</u>)	X	X	X			X	X	X	X	X	X	X	X	X	X	X	
Desert Woodrat (<u>Neotoma lepida</u>)			X						X	X	X	X	X	X			Rocks, Canyons
Porcupine (<u>Erethizon dorsatum</u>)														X			
Coyote (<u>Canis latrans</u>)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Kit Fox (<u>Vulpes macrotis</u>)	X	X	X	X	X	X	X	X		X	X	X	X		X	X	
Gray Fox (<u>Urocyon cinereoargenteus</u>)				X				X						X			
Ringtail Cat (<u>Bassariscus astutus</u>)				X								X	X	X	X		Rocks, Canyons
Raccoon (<u>Procyon lotor</u>)														X	X		
Badger (<u>Taxidea taxus</u>)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Long-tailed Weasel (<u>Mustela frenata</u>)				X				X	X			X	X	X	X		
Spotted Skunk (<u>Spilogale putorius</u>)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Mountain Lion (<u>Felis concolor</u>)				X								X	X	X	X		

TABLE 11 - 8-4

Significant Amphibian and Reptile
Species of the Barstow to Las Vegas Race Course

COMMON NAME AND SCIENTIFIC NAME	Sec. Interior's ENDANGERED LIST	Sec. Interior's THREATENED LIST	California Dept. of Fish & Game ENDANGERED	California Dept. of Fish & Game RARE	California Dept. of Fish & Game Fully Protected	Partially Protected Species	Blue List of Diminishing Birds	Species limited in numbers due to restricted habitat	Species limited in numbers due to pos- ition in food chain	Special Values for Education	Special Values for Science	Recreation: Consumptive Uses	Recreation: Non-Consumptive Uses	Commercial Uses	Comments
Red-spotted Toad (<u>Bufo punctatus</u>)								X							
Pacific Tree Frog (<u>Hyla regilla</u>)								X							
Desert Tortoise (<u>Gopherus agassizii</u>)				X					X				X		
Banded Gecko (<u>Coleonyx variegatus</u>)					X				X		X		X		
Desert Iguana (<u>Dipsosaurus dorsalis</u>)					X						X	X	X	X	
Chuckwalla (<u>Sauromalus obesus</u>)					X			X			X	X	X	X	
Mojave Fringe-toed Lizard (<u>Uma scoparia</u>)					X			X		X	X	X	X		
Collared Lizard (<u>Crotaphytus collaris</u>)					X			X			X	X	X	X	
Long-nosed Leopard Lizard (<u>Crotaphytus v. wislizeni</u>)					X						X			X	
Desert Horned Lizard (<u>Phrynosoma platyrhinos</u>)					X					X	X	X	X	X	
Rosy Boa (<u>Lichanura trivirgata</u>)					X			X		X	X	X	X	X	
Common Kingsnake (<u>Lampropeltis getulus</u>)					X				X		X	X	X	X	
Ringneck Snake (<u>Diadophis punctatus</u>)								X			X				
Utah Black-headed Snake (<u>Tantilla planiceps utahensis</u>)								X			X				

Significant Reptiles and Amphibians Barstow to Las Vegas Race Course

[illegible]

TABLE 11 - B-5
Significant Bird Species of the Barstow-Las Vegas
Race Course

COMMON NAME AND SCIENTIFIC NAME	Sec. Interior's ENDANGERED LIST	Sec. Interior's THREATENED LIST	California Dept. of Fish & Game ENDANGERED	California Dept. of Fish & Game RARE	California Dept. of Fish & Game Fully Protected	Partially Protected Species	Blue List of Diminishing Birds	Species limited in numbers due to restricted habitat	Species limited in numbers due to pos- ition in food chain	Special Values for Education	Special Values for Science	Recreation: Consumptive Uses	Recreation: Non-Consumptive Uses	Commercial Uses	Comments
Sharp-shinned Hawk (<u>Accipiter striatus</u>)							X	X							
Swainson Hawk (<u>Buteo swainsoni</u>)							X	X							
Zone-tailed Hawk (<u>Buteo albonotatus</u>)							X	X			X				Rare Visitor
Peregrine Falcon (<u>Falco peregrinus</u>)	X		X		X										
Prairie Falcon (<u>Falco mexicanus</u>)							X								
American Kestrel (<u>Falco sparverius</u>)							X					X			
Gambel Quail (<u>Lophortyx gambelii</u>)					X							X			
Chukar (<u>Alectoris chukar</u>)					X							X			
Mourning Dove (<u>Zenaidura macroura</u>)						X						X			
Flammulated Owl (<u>Otus flammeolus</u>)								X		X	X		X		
Mexican Screech Owl (<u>Otus asio cineraceus</u>)								X		X	X		X		
Saharo Screech Owl (<u>Otus asio gilmani</u>)								X		X	X		X		
Burrowing Owl (<u>Speotyto cunicularia</u>)							X								
Broad-tailed Hummingbird (<u>Selasphorus platycercus</u>)								X							
Mearns Gilded Flicker (<u>Colaptes auratus</u>)								X							

TABLE II - B-5 (Cont'd)

Significant Bird Species of the Barstow-Las Vegas
Race Course

COMMON NAME AND SCIENTIFIC NAME	Sec. Interior's ENDANGERED LIST	Sec. Interior's THREATENED LIST	California Dept. of Fish & Game ENDANGERED	California Dept. of Fish & Game	RARE	California Dept. of Fish & Game	Partially Protected Species	Blue List of Diminishing Birds	Species limited in numbers due to restricted habitat	Species limited in numbers due to pos- ition in food chain	Special Values for Education	Special Values for Science	Recreation: Consumptive Uses	Recreation: Non-Consumptive Uses	Commercial Uses	Comments
Lewis Woodpecker (<u>Asyndesmus lewis</u>)									X			X	X			
White-breasted Hairy Woodpecker (<u>Dendrocopos villosus leucothorectis</u>)									X			X	X			
Cassin Kingbird (<u>Tyrannus vociferans</u>)									X			X	X			
Wright Flycatcher (<u>Empidonax wrightii</u>)									X			X	X			
Pinyon Jay (<u>Gymnorhinus cyanocephalus</u>)									X				X			
Verdin (<u>Auriparus flaviceps</u>)									X				X			
Providence Mtns. Bushtit (<u>Psaltriparus minimus providentialis</u>)									X			X	X			
Desert Bewick Wren (<u>Thryomanes bewickii eremophilus</u>)								X	X				X			
Dotted Canyon Wren (<u>Catherpes mexicanus</u>)									X				X			
Bendire Thrasher (<u>Toxostoma bendirei</u>)									X			X	X			
Crissal Thrasher (<u>Toxostoma dorsale</u>)									X				X			
Great Basin Hermit Thrush (<u>Hylocichla guttata polionata</u>)									X							
Western Blue-gray Gnatcatcher (<u>Polioptila caerulea amoenissima</u>)									X				X			
Sonora Black-tailed Gnatcatcher (<u>Polioptila melanura lucida</u>)									X				X			
Western Ruby-crowned Kinglet (<u>Regulus calendula cinerascens</u>)									X				X			
Bell Vireo (<u>Vireo belli</u>)								X	X				X			

Significant Bird Species of the Barstow-Las Vegas Race Course

List

Table II-B-6
Significant Mammal Species of the Barstow-
Las Vegas Race Course

COMMON NAME AND SCIENTIFIC NAME	Sec. Interior's ENDANGERED LIST	Sec. Interior's THREATENED LIST	California Dept. of Fish & Game ENDANGERED	California Dept. of Fish & Game RARE	California Dept. of Fish & Game	Partially Protected Species	Blue List of Diminishing Birds	Species limited in numbers due to restricted habitat	Species limited in numbers due to pos- ition in food chain	Special Values for Education	Special Values for Science	Recreation: Consumptive Uses	Recreation: Non-Consumptive Uses	Commercial Uses	Comments
Spotted Bat (<u>Euderma maculatum</u>)						X		X				X			Very rare
Desert Cottontail (<u>Sylvilagus auduboni</u>)						X						X			
Black-tailed Jackrabbit (<u>Lepus californicus</u>)						X						X			
Panamint Chipmunk (<u>Eutamias panamintinus</u>)								X							
Rock Squirrel (<u>Spermophilus variegatus</u>)								X			X				
Chisel-toothed Kangaroo Rat (<u>Dipodomys microps</u>)								X			X				
Porcupine (<u>Erethizon dorsatum</u>)								X			X				
Coyote (<u>Canis latrans</u>)								X			X				
Kit Fox (<u>Vulpes macrotis</u>)									X						
Gray Fox (<u>Urocyon cinereoargenteus</u>)						X		X				X			
Ringtail Cat (<u>Bassariscus astutus</u>)					X			X		X	X				
Raccoon (<u>Procyon lotor</u>)								X				X		X	
Long-tailed Weasel (<u>Mustela frenata</u>)								X			X				
Badger (<u>Taxidea taxus</u>)						X			X			X		X	
Mountain Lion (<u>Felis concolor</u>)						X		X	X			X			

Table II-B-6 (conclusion)

[illegible]

TABLE II B-7

HABITAT TYPES

COMMON AND SCIENTIFIC NAMES															
Alkali Sink-Lake Edge	Alkali Sink with Mesquite	Wash: Desert Willow (Low Elevation)	Wash: Desert Willow (Clark Mtn)	Wash: Acacia - Black-banded Rabbit Brush	Wash: Cheese Bush (Low)	Wash: Cheese Bush (High)	Wash: Desert Almond	Creosote Bush Communities	Josua Tree-Creosote or Mojave Yucca-Cactus	Josua Tree-Mojave Yucca-Cactus	Blackbrush Communities	Pinyon Juniper Woodland	Palchaika Spring	Crucifixion Thorn	COMMENTS
Amphibians	0	1	0	1	0	0	0	0	0	0	0	0	3	0	
Tortoise					1		1	1	1						
Lizards	4	9	10	12	8	10	10	12	10	11	8	7	5	8	
Snakes	10	11	11	15	14	14	16	16	13	15	11	10	10	10	
Reptiles - Total	14	20	21	27	22	23	26	29	24	27	19	17	15	18	
Birds	12	30	23	60	19	14	34	17	39	41	26	70	44	4	
Bats	0	1	0	16	0	1	0	3	2	11	15	16	17	0	
Rabbits and Rodents	8	13	10	13	11	12	14	14	13	14	18	17	11	9	
Predators and Others	6	6	6	10	6	6	7	6	6	9	9	11	10	5	
Large Herbivores	1	1	1	3	1	1	3	1	1	2	3	3	2	0	
Mammals - Total	15	21	17	41	18	20	24	24	22	36	44	47	40	14	
Total Number of Species Per Habitat	41	72	62	128	60	57	84	70	85	104	89	134	99	36	

Wildlife. The Crucifixion Thorn community has basically the same vertebrate inhabitants as the surrounding creosote communities. There are 5 species of birds, 15 species of mammals, and 18 species of reptiles. Significant species of birds which occur here are the mourning dove, an important game species. Significant mammals include the black-tailed jackrabbit, desert cottontail, bobcat, coyote, and badger, all hunted for sport or pelts; and the kit fox, a fully protected species. Reptiles are common in this community, and one may see banded geckos (at night), leopard lizards, desert iguana, and desert horned lizards, all of which are partially protected by State Fish and Game Codes. The Utah black-headed snake and desert night snake may rarely be seen here.

Existing Habitat Conditions. The Crucifixion Thorn habitat appears to be undisturbed.

C. Human Interest Values

1. Aesthetics

The Barstow-Las Vegas race passes through a variety of landscape situations: creosote-dominated flatlands, playas, alluvial fans, desert mountain passes, yucca highlands, and cactus gardens, to mention just some diverse types of scenic terrain. Much of the proposed route traverses desert country that is relatively common, but certain sections of the course cross, touch, or pass close by unusual, especially scenic, historic, and fragile features such as Pachalka Cactus Gardens, Old Fort Soda, and Soda Lake Playa Potential Natural Area. These areas are described later in this section.

Many recreationists regard the desert as a beautiful place. Some specifically seek out the desert's extraordinary opportunities for solitude and silence in an increasingly urbanized world. Others incidentally enjoy the desert's aesthetic qualities. While "beauty is in the eye of the beholder," experience has shown that most people tend to agree about the scenic and visual qualities of desert resources.

For aesthetic description and evaluation purposes, the course of the proposed race has been divided into 17 segments. (See Index Sheet D-1 following page III-26 of the impact section). The segments have been determined from topographic and vegetative characteristics. These segments are illustrated in photographs 1-1 through 17-1. The photographs were taken from a low-flying aircraft and typify the landscape characteristics of each segment. Specific descriptions of each of the segments may be found in the "Aesthetic Impact Evaluation" sheets in Section III. Aesthetic concerns regarding noise and air pollution are also covered elsewhere in this report.

2. Recreation

Recreational use of the desert is manifest in many activities. Activities pursued in the area of the proposed race range from wilderness

experience to shooting and motorcycle hill-climbing. A list of desert recreational activities follows in this section.

While there is some knowledge of the kinds of recreational activities which occur along the race route, little quantitative information is available as to numbers of people involved in these activities. As a result, recreation descriptions and discussions of recreation conflict situations in this report necessarily avoid quantitative comparisons.

Recreational use of the desert probably reaches its annual peak during the Thanksgiving weekend. Many recreation activities occur simultaneously in the same area as the proposed organized motorcycle race: sightseeing, photography, painting, backpacking, camping, rock-hounding, nature study, hiking, mountain-climbing, hunting, shooting, picnicking, driving for pleasure, and casual (not organized) motorcycle and four-wheel drive riding. Detailed data on the numbers of these specific recreation users is not available.

These specialized activities often present their own unique requirements. They may require a particular kind of area with certain geologic or atmospheric conditions, such as mountain-climbing or sailplane-flying, or they may require the presence of particular resources such as wildlife for hunting, or certain minerals or gemstones for rockhounding. A description of recreational activities along the race route follows.

Wilderness Experience. Many people enjoy the desert for its unique qualities of solitude and silence. The remoteness of many desert areas offers an individual the opportunity to escape the sights and sounds that are synonymous with the frantic pace of modern urban living. Here the person seeking solitude has the opportunity to gather his thoughts and contemplate the wonders of the natural scene.

Several visually diverse and spectacular areas along the racecourse are prime locations for a solitude experience. These include: West Cronese Dry Lake, Soda Lake, Solomon's Knob, Clark Mountain, and Pachalka Cactus Gardens.

Backpacking and Hiking. Backpacking and hiking entail a number of other recreational pursuits including but not limited to the pursuit of a wilderness experience -- nature study, photography, camping, and physical exercise.

Backpacking and hiking areas within the influence of the racecourse include the area around Halloran Spring from Cree Camp to Solomon's Knob, the Clark Mountain Range, and the Old Mojave Road along the Mojave River Basin.

Nature Study. Indigenous vegetative and wildlife species, spectacular geologic formations, ancient archaeological sites, and colorful historic ruins intrigue many nature lovers and entice them to the desert, primarily during the cooler winter months.

Areas of high natural and cultural value located within the immediate route of the racecourse include: Clark Mountain Fir Forest proposed natural area, Pachalka Spring Cactus Gardens, and Soda Lake playa, which contains archaeological, historical, and botanical areas of significance.

Rockhounding. Surveys conducted by the Western Rockhound Association, Inc., have shown that the California Desert is perhaps the most densely utilized region in the United States by amateur rock and mineral enthusiasts.

The proposed racecourse crosses some very interesting and unique geologic features and collecting areas. Notable areas are: Alvord Mountain, West Cronese Lake, Clark Mountain, and Halloran Spring.

Three factors that rockhounds consider essential are: (1) the abundance and quality of rocks, (2) access to the collecting area, and (3) availability of a camping spot large enough for sizeable groups. A number of areas along the proposed race route satisfy these requirements.

Land-Sailing, Glider-Flying, Model Plane-Flying, Model Rocket-Launching. Sailplanes (glider-flying), land-sailing, model plane-flying, and model rocket-launching are other recreation activities that are becoming popular on the desert.

All of these activities require a dry, flat, relatively hard surface, such as dry lake playas afford.

Roach and Jean Dry Lakes both receive a considerable amount of use from recreationists pursuing these activities, especially during the Thanksgiving weekend. The racecourse crosses both of these lakes.

Hunting and Shooting. Certain areas along the proposed racecourse provide hunting opportunities for recreationists. The area between Halloran Spring and Clark Mountain receives considerable use by upland game hunters, especially those seeking quail and chukars. Other game species hunted along the race route include jackrabbits, cottontails, mule deer, and doves. Deer are found only in the Clark Mountain along the proposed race route. In general, the upland game species can be expected wherever there is standing water or where "guzzlers" (constructed water catchments for wildlife) have been installed by the California Department of Fish and Game.

Driving for Pleasure. The Bureau of Outdoor Recreation's 1967 report on national outdoor recreation use and trends indicated that "Driving for Pleasure" was the third most popular outdoor recreation activity in America. While figures for pleasure-driving in the California Desert are not available, it is likely that this use comprises a very significant portion of total outdoor recreation. During the extended Thanksgiving weekend in November, thousands of Southern

California motorists will be out on the highways pleasure-driving and sightseeing in the California Desert. Interstate Highway 15 is the major link between the Los Angeles Basin and Las Vegas. The racing activities would be visible along 12 segments of the proposed race. California State Highway Department traffic counts indicate an average daily traffic total of approximately 16,000 vehicles on Interstate 15 at Barstow and 8,500 vehicles 70 miles east of Barstow (about the mid-point along the race route). No projection for increase of traffic on the Thanksgiving Day weekend is available.

Recreation Vehicle Use. Recreational vehicle (RV) recreationists are as diverse in their preference for use areas and the activities they participate in as the variety of vehicles they use. This is important because personal interests, types of vehicles, and uses of the RV may influence land travel patterns and attitudes toward the landscape traveled.

Three "orientation" types of RV recreationists can be identified - activity, vehicle, and land oriented. (Peine, 1972.) For the vehicle oriented recreationist, the vehicle is an end in itself. His interests lie with the competitive or mechanical aspects of the machine. The activity oriented recreationist uses his vehicle as a means to an end. His vehicle is used as a means of transportation to an area where he can participate in his singular activity. The land oriented category represents by far the majority of RV recreationists on the national resource lands of the Mojave Desert. For this orientation type, the vehicle probably draws some interest, but the recreational attraction is in some elements of the landscape, such as scenery or remoteness. In general, the land oriented RV recreationist will pursue a larger variety of recreational activities than the activity oriented recreationist.

Many segments of the race route are popular with land and activity oriented recreation vehicle users. Clark Mountain, Solomon's Knob, and Soda Lake are especially popular with those who are land oriented. Activity oriented users can be expected at Ivanpah, Roach, and Jean Lakes as well.

Photography and Painting. Every year, increasing numbers of photo enthusiasts and painters are reproducing desert scenes. A number of areas along the race route provide opportunities for these artistically oriented desert users. Noteworthy situations include Clark Mountain, Solomon's Knob, West Cronese Lake and associated dunes, and the Soda Lake area.

Camping and Picnicking. Camping and picnicking on the desert is unmanaged. Users may camp or picnic where they choose and need not use a formally designated site. In fact, many users prefer the freedom of self-selected sites.

A moderate amount of dispersed camping takes place along the race route. Less picnicking occurs because of distance involved from urban concentrations.

Popular camping areas include the Razor Pits, the Mojave River Basin, the Cree Camp area, and the Clark Mountain. Undoubtedly, camping also occurs at East and West Cronese Lakes as well as the Solomon's Knob area with its varied vegetative and topographic features.

Areas of Unique or Special Recreational Value

(1) Soda Lake Playa and Old Fort Soda Spring. The proposed race route will pass $1\frac{1}{2}$ miles south of Old Fort Soda Spring and cross Soda Lake Playa. Soda Lake Playa and the old resort complex at Soda Spring have been identified as a potential natural area of scientific importance that merits special attention and management to insure preservation.

(2) Pachalka Cactus Gardens. The proposed 1974 racecourse cuts through Pachalka Spring and Cactus Gardens on the south slope of Clark Mountain near the California-Nevada border.

The Cactus and Succulent Society of America has identified the Pachalka Gardens as one of special significance for its concentrated numbers and species of desert cacti. This is one of the finest stands of cacti in the eastern Mojave Desert. Pachalka Spring and the area around the abandoned mine are located on private property, but much of the gardens is on public land.

3. Cultural (Archaeology and History)

a. General Background

The eastern Mojave Desert through which the race crosses is extremely rich in cultural resources. These resources range from the earliest cultural evidence of man in Southern California to the remains of late 1800's mining and railroad activities.

The race starts at the eastern side of Coyote Dry Lake, the northern embayment of ancient Pleistocene Manix Lake, which has yielded an abundance of evidence of Early Man. The Calico "Early Man Dig", begun in 1964 by the San Bernardino County Museum (SBCM), with assistance from the National Geographic Society and the Leakey Foundation, is still continuing in the Calico Mountains about 10 miles to the west of the start area. The Manix Lake Survey, conducted between 1954 and 1963 by Ruth De Ette Simpson, San Bernardino County Archaeologist, discovered more than 120 surface sites within the Manix Lake Basin. Simpson (1972) reports that these sites include recent sites along the modern course of the Mojave River; slightly older sites of desert Basket-maker material, the Amargosa, around the recessing shorelines of Coyote Lake; western paleo-Indian material on the recessive shorelines of Manix Lake itself; and "Early Man" material above the high shoreline of ancient Manix Lake.

Crossing Soda Dry Lake, the course transects the southern end of ancient Pleistocene Lake Mojave. It is around the old shoreline of Lake Mojave (Silver and Soda playas) that the earliest cultural evidence of man in the California Desert, which is referred to as the Mojave-Playa Complex, has been found. Claude Warren (personal communication) of the University of Nevada at Las Vegas reports that in addition to Lake Mojave's unique early cultural remains, the south end of Soda Playa is one area in the Mojave Desert where Pueblo agriculture could have been practiced. He adds that Pueblo pottery has been reported from this area and that Shoshonean remains are quite common throughout the sand dune area where mesquite occurs.

Five more major playas (West Cronese, East Cronese, Ivanpah, Roach, and Jean) are crossed by the proposed racecourse. Brief archaeological reconnaissances have been carried out around portions of all of these playas except West Cronese Lake. However, none of these playas, with the possible exception of East Cronese Lake, have been systematically surveyed in their entirety. Some of these playas could possibly yield additional evidence of Early Man and/or western paleo-Indian occupation and utilization. Existing ethno-historic information indicates that as late as the end of the 1800's standing water on playas such as Ivanpah and East Cronese attracted fairly large aboriginal populations who inhabited the shorelines.

Additional aboriginal utilization is known to have been intensive in areas such as Clark Mountain and Shadow Valley. In areas like these, early aboriginal hunting and gathering populations exploited a wide variety of resources (e.g., deer, bighorn sheep, agave, and numerous hard seed plants).

The tangible remains of the California Desert's pre-historic and protohistoric aboriginal occupants are extremely variable. The types of archaeological sites found throughout this area include seasonal villages or base camps, temporary campsites, rockshelters, roasting pits, petroglyphs, trails, ceramic shard scatters, and various lithic sites.

The historic resources within the area of the proposed racecourse include the Spanish Trail, the Old Government Road, the Tonopah-Tidewater Railroad, and evidence of early mining activities.

b. Field Methodology

The entire area of the undertaking's potential environmental impact was assessed for cultural resources. Due to time and manpower limitations, the major focus of the field examination was geared to identify and assess cultural resources in the area of the undertaking's potential environmental impact, and was not attempting to conduct any sort of regional archaeological survey. The area of the undertaking's potential environmental impact is defined as all of the area which the motorcycles involved in the proposed race, as well as

the support vehicles, will physically pass over and those areas in which spectators and pit crews will be expected to congregate. The entire route of the proposed course follows existing roads or previously used, well-defined off-road vehicle trails. A field reconnaissance was conducted of every portion of the proposed course, including start, pit, and finish areas, where the potential occurred for impacting cultural resources.

Before the field examination was conducted, a literature search was made for all cultural resource sites within roughly a three-mile corridor on either side of the proposed course. The major source of this information was the site survey records of the San Bernardino County Museum for the California portion and information provided by Dr. Richard Brooks of the Museum of the University of Nevada, Las Vegas, for the Nevada portion. This provided information to assist in evaluating the cultural resources which may be located within the area of the undertaking's potential environmental impact.

The field examination of the areas where the potential occurred for impacting cultural resources was made by BLM archaeologists. This examination was made by slowly driving a vehicle along the route of the proposed course. Frequent stops were made to closely examine probable areas on foot. In addition, on the basis of known archaeological data, certain areas were selected for intensive survey. This consisted of BLM archaeologists walking over the course and adjacent areas of potential impact and/or cultural resources.

All previously unrecorded sites were issued temporary site numbers (e.g., BV-1). These sites were recorded to the extent possible.

c. Findings

The proposed racecourse comes within 3 miles of 50 recorded archaeological sites, two historic trails, and one historic railroad. Twelve of these archaeological sites are less than one-half mile from the proposed course. The field reconnaissance recorded eight additional archaeological sites.

Table III-C-2 briefly discusses the sites mentioned above and the possible impacts upon each by the proposed action without mitigating measures.

To facilitate discussion of the cultural resources, the proposed racecourse was separated into seven segments. The cultural resources within each of these segments are shown on Index Sheet D-2 and are discussed as follows:

(1) Coyote Lake through West Cronese Lake. BV-1 appears to have been a quarry area and chipped stone tool manufacturing site. The site is literally covered with chalcedony and chert flakes, cores, and tools with associated chipping circles. The site evidences extensive use from early to late prehistoric times.

At least a half-dozen additional archaeological sites, recorded by the Manix Lake Survey, are located within a 4-mile area around the start. A field check has indicated that none of these sites will be directly affected by the proposed action.

Three apparent quarry sites (BV-2, BV-3, and BV-4) were located 2½ to 5 miles west of West Cronese Lake along the racecourse. The racecourse, which is over 200 meters wide in this area, passes through all three sites. Provenience of some of the lithic materials has obviously been disturbed by vehicles passing over them.

The quarry sites may have been used for the production of specific types of flakes which were either finished as tools on-site or removed as blanks to some other location for completion as tools.

BV-2 consists of a fairly extensive scatter of loci containing cores and flakes of chalcedony and other silicious materials. The flakes are usually in association with the cores from which they were removed in the desert pavement matrix. This site is located immediately west of two low hills approximately 5 miles west of the West Cronese Lake playa.

BV-3 is located east of BV-2. The sites are separated by two low hills bearing no cultural remains. Both sites are similar in artifactual materials. There are cores and flakes of silicious materials located in scattered loci throughout the desert pavement. This site appears to contain more isolated flakes (not in direct association with cores) than BV-2. This may simply be due to greater disturbance by vehicles and erosional processes than any differences temporally or functionally in the two sites. Specific site boundaries were not defined, though it would appear they may coincide with the presence or absence of suitable silicious materials for tool production. The site contains quantities of unmodified silicious materials in the form of isolated cobbles. The materials become more scarce and finally disappear at the western edge of the site as the lithic materials become coarse volcanics unsuitable for the production of chipped stone tools.

BV-4 appears to be similar to but less extensive than BV-2 and BV-3. A brief examination located only four chalcedony flakes and four chalcedony cores (one core evidencing battering) scattered over an area of more than 100 meters in diameter.

This site is located approximately 2 miles east of BV-3. In addition to less artifactual material, the silicious lithic resource material is less frequent at BV-4.

(2) West Cronese Lake through East Cronese Lake.

According to SBCM's records, 22 archaeological sites have been previously recorded around East Cronese Lake. All of these sites are located in the sand dunes around the playa. They consist of pottery, some chipped stone and groundstone tools, flakes, and numerous fire-cracked rocks. This is

all indicative of late prehistoric and protohistoric occupation. A cursory examination was made in 1973 of four of the archaeological sites -- SBr -246, -247, -248, and -249 that could possibly be directly affected by the race. Remains of SBr -247, -248, and -249 are minimal, making the sites extremely difficult to relocate. However, they are all located well above the route of the proposed course. SBr -246 contains an abundance of cultural material including pottery, chipped stone tools, and fire-cracked rock. This site is presently in pristine condition and has received impact only from an occasional relic collector. The proposed racecourse runs along the playa bottom below the dunes in which the site is contained.

A field examination was made of the wash and mesquite dunes area between the East Cronese Lake playa and the Interstate. Only three isolated flakes were found in the sandy gravel through which the course runs.

On the south side of East Cronese Lake just south of the Interstate, an additional site, SBr -129 has been recorded. Field examination located the site to the east of the flood control levee that has been built up along the east side of the wash coming out of Cronese Valley. Located in two depressions in the mesquite covered dunes, clusters of fire-cracked rock, potsherds, flakes, and evidence of cremations were noted at this site.

(3) East Cronese Lake through Soda Lake. The southwestern portion of Soda Lake is an area of archaeological and historical interest. The racecourse passes approximately 1½ miles south of Old Fort Soda and directly across the routes of the "Old Government Road" and Tonopah and Tidewater Railroad. Also the course crosses an archaeological site - BV-5 - in the immediate vicinity of the Old Government Road and Tonopah and Tidewater Railroad.

Old Fort Soda was established as a "redoubt" by the U.S. Army during the Pah-Ute Campaign of 1860 and was periodically utilized until the latter half of the 1860's. Presently, the only remains of the "fort" are portions of two of the walls of the old four-walled stone structure which can be seen in one of the corners of the old Zyzzx Springs resort. Old Fort Soda ("Carlton's Redoubt") was an important watering place along the Old Government Road (the "Mojave Road") which connected Fort Mojave with Los Angeles. Utilized occasionally during the limited Civil War activities in California, the trail later became a post-Civil War mail route which was protected by a series of temporary outposts and redoubts similar to Fort Soda.

The old grade of the Tonopah and Tidewater Railroad is crossed by the proposed motorcycle route on Soda Lake near Soda Springs. The railroad grade is an earthen berm which is of considerable interest to history buffs and desert sightseers and hikers. Remains of old ties may still be seen along the grade. This unusual "desert community" railroad, which operated between Beatty and Ludlow during 1907-1937, remained one of the few small, independent railroads in California. The old grade affords the rare opportunity to view remains of this historically significant enterprise.

BV-5 consists of a fairly extensive scatter of lithic and sherd remains along the western edge of the playa. Artifacts were located eroding out of the mesquite dunes and in blowout areas among the sandy hummocks at the lake's shore. The range of artifacts observed suggest a variety of prehistoric activities. Chipped-stone tools, including projectile points, were located as well as debitage indicative of tool manufacture. Pottery fragments and fire-cracked rock in the dunes suggest cooking activities. The presence of an abundant mesquite food resource growing on the dunes leads to the speculation that this site may represent a seasonal encampment associated with the gathering and processing of this plant food. Also other subsistence activities may have been related to the resources existent when there was water in the lake. A long temporal sequence may be represented here, ranging from the last lake stand (ca. 5,000 B.P.) to the recent occupation at Soda Springs. Further detailed archaeological investigations are needed to determine the antiquity of the habitation of the area and the types of occupation which occurred.

Two archaeological sites, BV-6 and BV-7, were recorded where the racecourse leaves Soda Lake at the eastern side and cuts into the edge of the Little Cowhole Mountains. BV-6 was previously recorded as Warren's site 14 by Dr. Claude Warren of UNLV. The site was probably collected by Dr. Warren and/or the Southwest Museum. It covers a spring mound and extends northward an undetermined distance. A few lithic artifacts were observed including three chalcedony tools (i.e., one chalcedony bifacial ovate and two chalcedony flake tools). The site is currently in a grazing area and has been extensively disturbed by mining and grazing related activities. It now has a windmill, water tank, corral, shed, cement building foundations, and roads located on it.

BV-7 is just north of BV-6 where the racecourse cuts back down to the playa edge. The course is between 150 and 300 meters in width through the site. There is a sparse scatter of lithic remains over a wide area in the sand directly adjacent to the playa. The site is associated with the ancient shoreline of Pleistocene Lake Mojave as evidenced by the presence of fossil freshwater mussel shells on the site.

(4) Soda Lake through Clark Mountain. A field inspection was made over the major portion of this area prior to the 1973 race. No archaeological or historical resources were found in the portion examined in 1973 that would be subject to impact from the event. The closest recorded sites to the proposed course are a minimum of a mile from it.

No cultural resources were encountered in the portions of the proposed course examined near Valley Wells. The pit area above Valley Wells appears to be an entirely disturbed area dissected by roads, washes, and gravel pit activities.

However, archaeological sites are known for the Clark Mountain area, but none have been officially recorded, with the exception of the Pachalka Spring sites. This area was inspected by motorcycle. No new archaeological sites were recorded. The course follows an existing road through the area.

The Pachalka Spring area was surveyed on foot and by vehicle. An existing road coinciding with the racecourse traverses a recorded site, SBCM - 1545. The team was unable to relocate this site. Two petroglyph sites are recorded in the spring area. The team observed one probable midden (roasting area) containing a large amount of fire-cracked rock. This does not appear to be in the direct route of the course. Another similar area was observed that has been dissected by the road southwest of the spring.

(5) Clark Mountain through Ivanpah Lake. One recorded site, SBr -134, is supposedly located on the racecourse and pit area at the northern end of Ivanpah Lake. A 1973 survey by the BLM East Desert Ranger Archaeologist failed to relocate this site. The San Bernardino County Museum records give a location, but provide no information on the nature of this site. It is probable that either the site has been destroyed by vehicle use (as it is recorded on a road) or was collected. Either way, the site appears to be no longer existent.

(6) Ivanpah lake through Jean Lake. This section of the racecourse was traversed by vehicle with the exception of the stretch from Roach Lake to where the course meets the powerline road southwest of Beer Bottle Pass. Brief field checks were made in areas which appeared likely to contain archaeological resources. A cursory examination of the Roach Lake shoreline near the course did not reveal any archaeological remains, but it is felt that this is still a high probability area for sites.

Information provided by Dr. Brooks (UNLV) describes four archaeological sites on the northeast beachline of Jean Lake. An inspection of the northern and southern beachlines where the course crosses the lake yielded no archaeological data.

(7) Jean Lake through Blue Diamond. The segment of the racecourse running from Jean Lake to the finish at Blue Diamond was driven. Two historic ruins and five dumps (probably from the mining era) were observed, along a 3-mile stretch of the course above the road to Sloan from Interstate 15.

Immediately north of the dumps, site BV-8 was recorded. The present racecourse cuts through the center of a thin scatter of flaked stone tools. Approximately nine artifacts were observed in the examined area of approximately 160 meters by 50 meters. The racecourse in this area is on an existing road. These few small tools may be indicative of yucca or other plant fiber-processing activity.

An examination of the finish area revealed no archaeological data. This area is disturbed by previous races.

4. Human Populations

The proposed race passes through two counties: the northern and eastern portions of San Bernardino County in California, and the southern and western portions of Clark County in Nevada.

San Bernardino County embraces a larger land area than any other county in the United States, approximately 12,000,000 acres. Its estimated total population as of July 1, 1973, is 736,636 persons. The County has been exhibiting a slow to moderate growth rate, from 682,233 persons in April of 1970 to its present state.^{1/} Most of this growth has been limited, however, to the County's urbanized areas and incorporated cities.

San Bernardino County is commonly divided into three parts - valley, mountain, and desert. The proposed race is all within the desert portion. Total desert population has grown only slightly: from 116,376 in 1970 to 120,696 in July of 1973. There has also been a small increase in the number of dwelling units in the desert portion of the County, from 50,151 units in 1970 to 53,509 units in mid-1973.

The racecourse in San Bernardino County lies within four of the six Enumeration Districts of Census Tract 103, as delineated by the Bureau of Census. Census Tract 103, comprising the central eastern portion of the County, has no incorporated cities and a total population of 2,660 as of July 1973.

Following is a table of population and dwelling unit types found in the racecourse Enumeration Districts:

POPULATION AND DWELLING UNITS IN PORTION OF CENSUS
TRACT 103

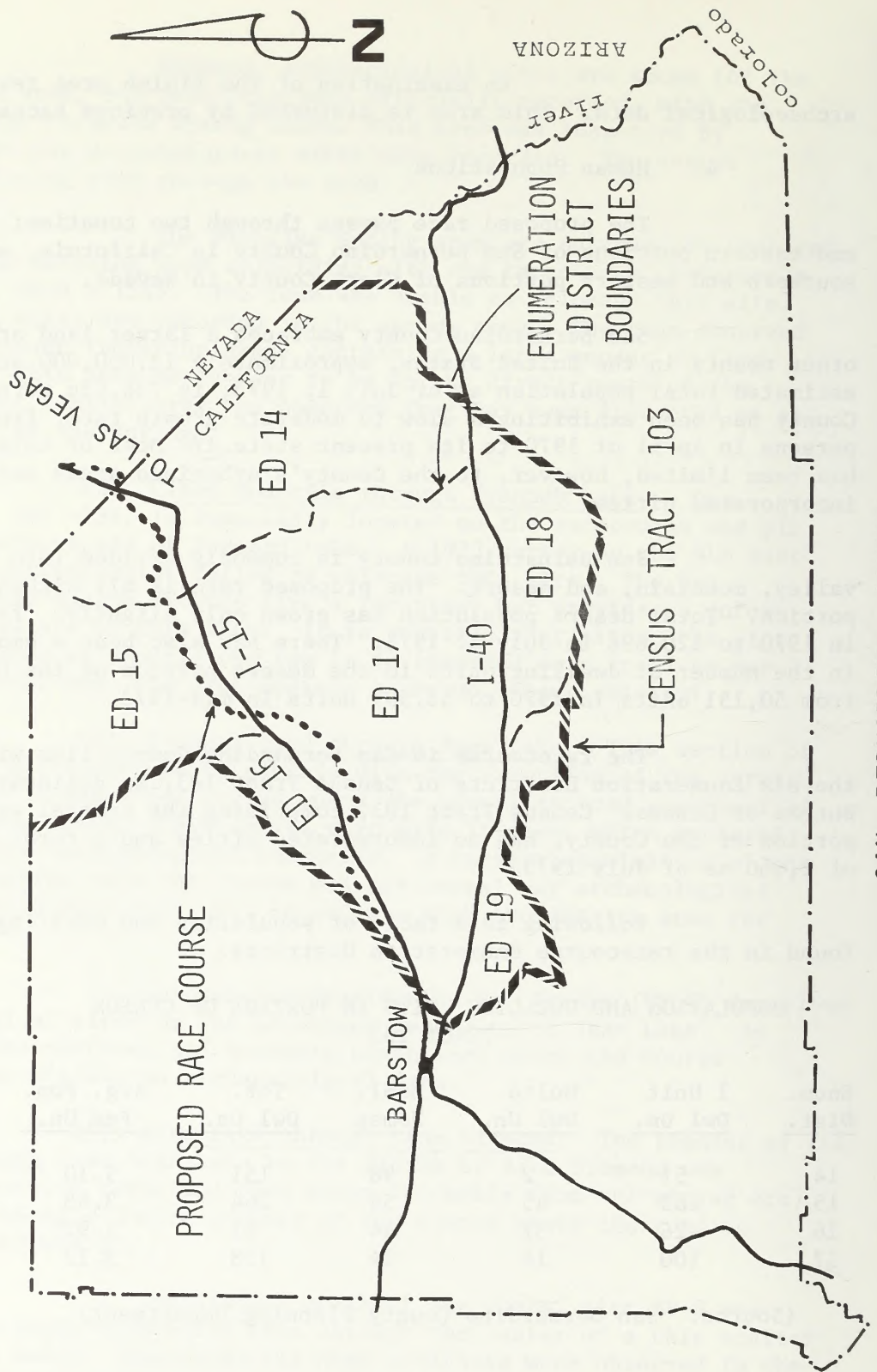
Enum. Dist.	1 Unit Dwl Un.	Multip. Dwl Un.	Mobl. Homes	Tot. Dwl Un.	Avg. Pop. Per Un.	Total Pop.
14	51	2	98	151	5.10	445
15	185	45	54	264	3.68	748
16	26	31	44	91	1.92	139
17	100	14	24	138	3.12	322

(Source: San Bernardino County Planning Department)

^{1/} All population statistics for San Bernardino County are from: San Bernardino County Planning Dept., Population and Housing Estimates, July 1973; and U.S. Bureau of the Census, 1970 Census of Population, San Bernardino-Riverside-Ontario, California Standard Metropolitan Statistical Area, (PHC 1).

Fig. HP-1

CENSUS TRACT 103 OF SAN BERNARDINO COUNTY



SAN BERNARDINO COUNTY

As can be readily noted from the above table the population distribution in the portions of San Bernardino County where the race is proposed is of a very low density. Indeed, a fly-over examination of the racecourse indicated that there are no dwelling units within more than a mile on either side of the proposed course.

Within the vicinity of the proposed race, however, there are several small towns and lesser settlements. As well, the beginning and end points of the race are near incorporated cities which will experience secondary impacts.

Barstow, the start, is a small city of 17,903, with a metropolitan area including up to 23,000 persons. It is supported mostly by defense and other government installations and by transportation and service industry. Tourism is also an important economic input.

The race start is proposed for an area about 20 miles east of the Barstow city limits and at least 10 miles from the outlying communities of Daggett and Yermo. There is no form of human habitation within 2 miles of the start.

The race will begin on and traverse the north side of Interstate 15 for the first fourth of its distance. At Rasor Road, approximately 10 miles southwest of Baker or some 45 miles east and north of Barstow, it will cross under the freeway and continue along the south side of I-15, passing 4 miles south of Baker.

The population of Baker is about 200 to 300 persons. It is a town comprised of gas stations, motels, and cafes operated for travelers along the Interstate and California Highway 127, which leads to Death Valley National Monument.

The racecourse crosses back to the north side of the Interstate between Baker and the settlement of Halloran Springs. This is a mining community of about 20 to 30 people, located approximately 20 miles east of Baker. The racecourse passes 2 miles north of Halloran Spring and then continues on the north side of I-15 through the Clark Mountain and on to the Nevada border and the community of Stateline.

There are no other notable settlements in the vicinity of the racecourse as it passes through San Bernardino County. There are very sparsely scattered dwelling units throughout this portion of the desert but, as noted above, none within the vicinity of the racecourse.

Clark County, Nevada, has less than a third of the land area of San Bernardino County and has only half the total population. Most of the population in Clark County is centered in the Las Vegas Valley.

Population growth there has proceeded slightly more rapidly than the corresponding California county; in 1970 the total population of

Clark County was 273,271; by July 1, 1973, it was estimated at 331,700.^{2/}

In San Bernardino County, almost all of the increase in population has occurred in the urban areas; in Clark County, growth has occurred in Las Vegas Valley. Also noteworthy are the recreation centers growing near Lake Mead.

The racecourse in Nevada lies mostly in the Goodspring township. This segment of Clark County was delineated in the 1970 Census. Then it had a population of 567. It comprises the area between the southwestern side of the Las Vegas Valley and the Nevada stateline with California. In 1973, the Clark County Regional Planning Council listed the town of Goodsprings with a population of 277 and growth in the area as negligible. Density outside the town is similar to eastern San Bernardino County, less than one house every 3 square miles.

There are, however, several small settlements that the racecourse passes near before it terminates on the outskirts of the Las Vegas urbanized area. The community of Stateline, a freeway crossover point for the race, has less than 100 permanent residents; several gas stations and a small casino are located there. Northeast of Stateline on the southern side of I-15, there are the abandoned and decaying settlements of Roach and Borax; few, if any, families live there. The town of Jean is located on I-15 about halfway between Stateline and the end of the race. The Regional Planning Council lists the population of Jean at 88 people.

The proposed route for the race passes south and east of Borax and Roach by a number of miles and south of Jean by 2 miles. Seven miles northeast of Jean, the course loops back to the north side of the freeway. The course then passes within 2 miles of the community of Sloan, approximately 50-60 persons, before it bears back to the northwest toward the small town of Arden, a community of 100-150 people. The racecourse turns east $2\frac{1}{2}$ miles south of Arden and then terminates at the junction of Blue Diamond Road and Interstate 15, located 2.6 miles east of Arden and 10 miles from the center of Las Vegas.

The last several miles of the race are run through a low density rural residential area; one which is resultant from previous Small Tract dispositions. The present density ratio is approximately one house for every 160 acres.

The race terminates near the city of Las Vegas, one of the notably growing urban centers in the southwestern United States. The city limits include a population of 135,355, but the entire metropolitan area, the Las Vegas Valley, reaches a total population of 316,725.

2. Statistics from: U.S. Bureau of the Census, 1970 Characteristics of Population, Nevada; and Clark County Regional Planning Council, Population Estimates, July 1973. No enumeration district differentiations were available for Clark County.

The city is most widely known for its tourist attractions: gaming casinos and entertainment clubs. There are, however, in addition to this primary economic base, extractive and secondary industries, including an atomic energy test installation and chemical manufacturing plants. There are also concomitant service and real estate interests that are supported by the tourist trade.

D. Other Uses

1. Private Lands

The majority of the racecourse is on BLM-administered lands; a portion, however, crosses privately owned property. These private lands are for the most part undeveloped, but a few contain houses and businesses. The businesses are located at Stateline, a small community at the California-Nevada border on Interstate 15. The houses are located at the end of the racecourse a few miles south of Las Vegas, Nevada.

In total, the proposed racecourse will traverse 51 parcels of private land for a distance of 20 miles with an additional 3 parcels being traversed for 3 miles along the proposed side hack course. (Motorcycles with side cars or "side hacks" try to stay as much as possible on roads and trails.)

2. Rights-of-Way (Telephone, Electrical, Roads, & Railroads)

The racecourse crosses a few rights-of-way and also travels along the length of some of the linear power and communication rights-of-way. Most of the linear rights-of-way have roads traversing along their length to provide maintenance access for the structures thereon. The access roads are seldom used and, therefore, receive little maintenance. It is imperative, however, that they remain passable at all times to utility trucks and similarly-equipped vehicles.

Some of the racecourse is either on or crosses county roads and a state highway. The county roads are usually dirt or gravel; are suitable for family type vehicles (sedans) and are well maintained. Two of the county roads are paved with asphalt and are relatively high speed roads. The state highway is Interstate 15, a limited access, high speed freeway. The course passes under I-15 twice at dry creek underpasses; once on a paved road underpass at Stateline, Nevada, and once on a railroad underpass in Nevada.

Other miscellaneous roads in the path of the racecourse were built by ranchers and miners and generally are in poor condition. One affected road, near Valley Wells, California, is a heavy duty paved road used by huge trucks to haul iron ore.

3. Grazing

The racecourse crosses two BLM cattle leases in California and two grazing allotments in Nevada. All four are located between

Baker, California, and the finish line in Nevada. The racecourse will cross three fencelines, two in Nevada and one in California, and will pass near one well in California (T. 12 N., R. 9 E., Sec. 4, SBM.) and two reservoirs (within Nevada). The fences are three-strand barbed wire with steel posts. The racers will negotiate all of the fences through gates.

The reservoirs are about one-quarter of one mile from the racecourse, which passes within a few yards of the well. However, neither the reservoirs nor the well are directly involved in the proposed action.

4. Mining

The subject racecourse probably crosses many unpatented mining claims, but the exact number and even the location of these claims is virtually impossible to determine. The claims are not noted on BLM records but are noted in the county recorder's office. The locations are often listed by reference to towns and natural objects and are usually vague and misleading.

There is current mineral production of rare earths, talc, iron ore, dolomitic limestone, sand, and gravel along the route. Molycorp at Mountain Pass in the Clark Mountain has produced several tens of millions of dollars in rare earth oxides since the 1950's. Pomona tile has been producing talc from the area of Solomon's Knob since 1938. There is small sporadic production of iron ore from south of Cave Mountain for use in the manufacture of Portland cement. Dolomitic limestone has been produced from the Bird Springs formation at Sloan, Nevada, since the early 1900's for manufacture of hydraulic lime. Sand and gravel pits along the route have intermittent to continuous operation for construction use. Clays of the playas have intermittent production for construction (sealant, surfacing, dike core) uses. The area had extensive gold, silver, and copper production with by-product lead, zinc, and antimony from numerous small mines in the 1860's, early 1900's, and the 1930's. Major production was from the Clark Mountain. Current activity includes cited production and claim location and exploration activity on occurrence of gold, silver, copper, iron, tungsten, talc, turquoise, fluorite, and carbonate rocks. The only mining likely to begin within the next 5 years would be for gold or silver because of increased prices, possibly from the Clark Mountain.

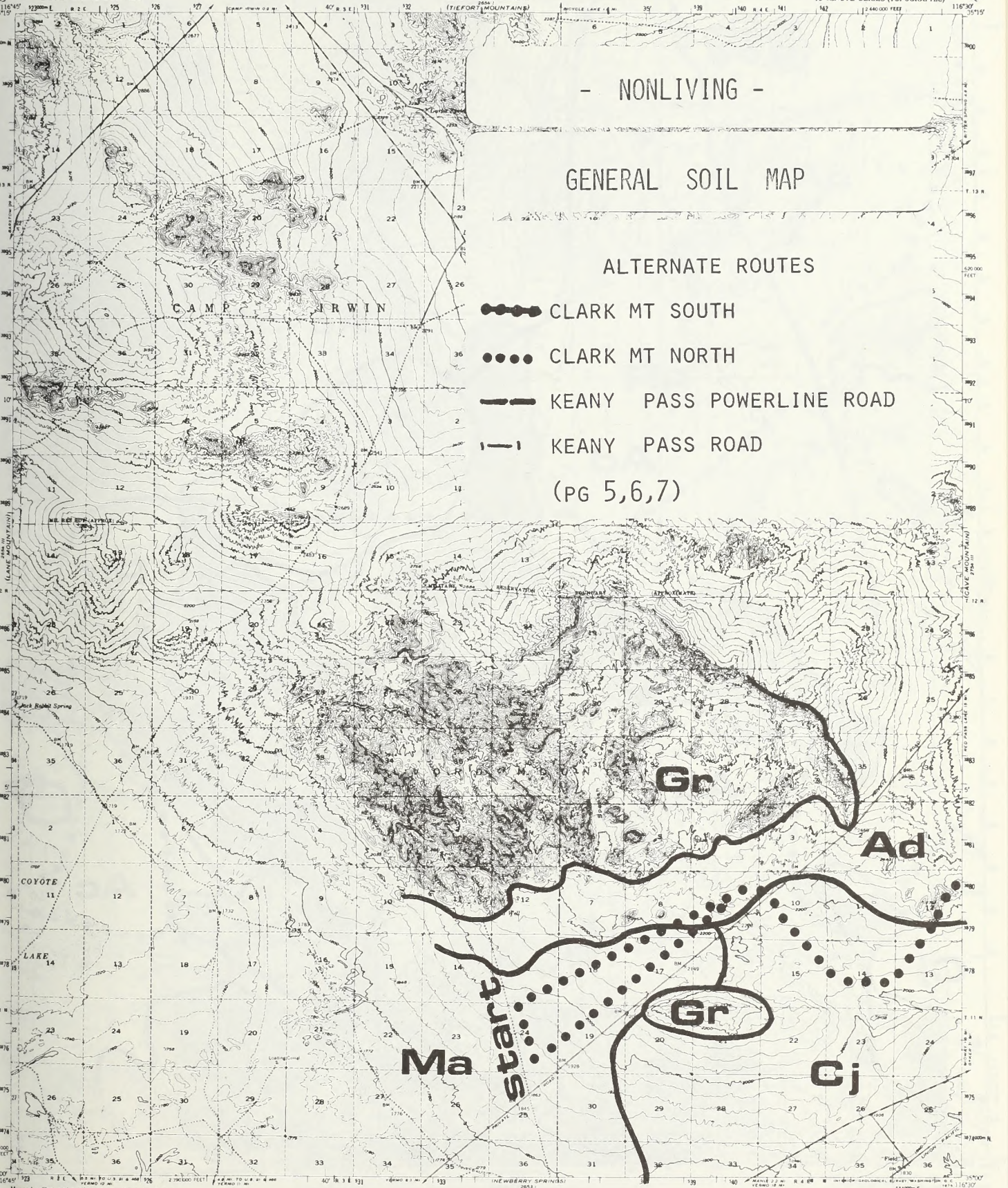
5. Railroads

The racecourse crosses over the Union Pacific Railroad near Roach Lake in Nevada. The crossing is on a gravelled, powerline right-of-way near the Nevada-California border. The crossing is typical of those found in the desert and is rather rudimentary.

— NONLIVING —

GENERAL SOIL MAP INDEX

- Ac - ANTHONY-CAJON-ARIZO ASSOCIATION
- Ad - ARIZO-DAGGETT ASSOCIATION
- CJ - CAJON ASSOCIATION
- Du - DUNELAND ASSOCIATION
- Gr - ROCKLAND ASSOCIATION
- Ma - MOJAVE-ADELANTO ASSOCIATION
- Rp - ROSAMOND-PLAYA ASSOCIATION



- NONLIVING -

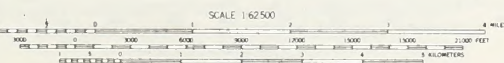
GENERAL SOIL MAP

ALTERNATE ROUTES

- CLARK MT SOUTH
- CLARK MT NORTH
- KEANY PASS POWERLINE ROAD
- KEANY PASS ROAD

(pg 5,6,7)

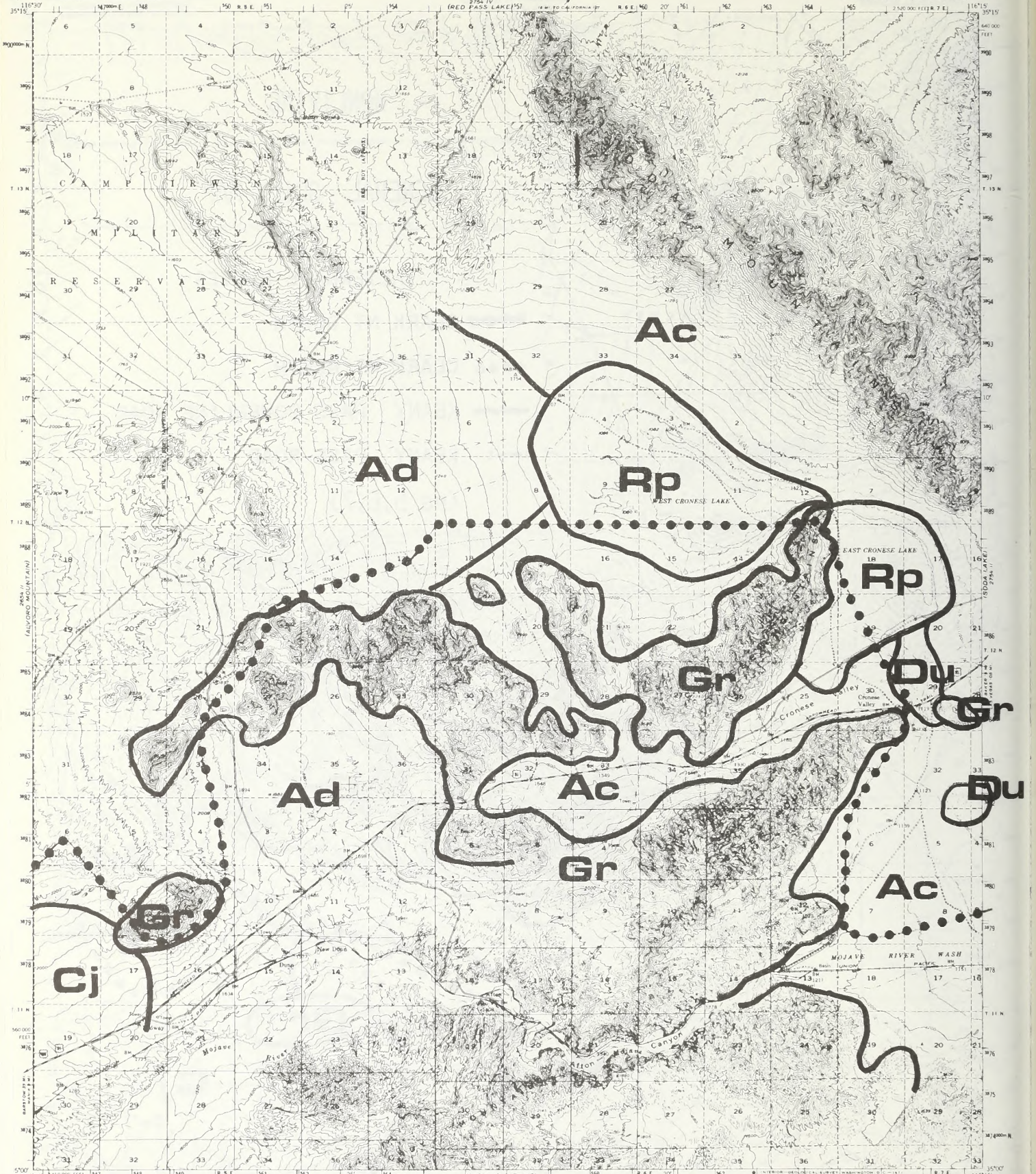
Control by USGAGS and USGS
Topography from aerial photographs by multiple methods
Aerial photographs taken 1948 Field check 1948
Polyconic projection, 1927 North American datum
10,000-foot grid based on California coordinate system,
zone 5
Dashed land lines indicate approximate location
Unchecked elevations are shown in brown
1000-meter Universal Transverse Mercator grid ticks,
zone 11, shown in blue



SCALE 1:62,500
CONTOUR INTERVAL 40 FEET
DASHED LINES REPRESENT HALF-INTERVAL CONTOURS
DATUM TO MEAN SEA LEVEL
THIS MAP COMPLES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225 OR WASHINGTON, D. C. 20242
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
Heavy-duty ——— Light-duty ———
Medium-duty ——— Unimproved dirt ———
U. S. Route State Route

ALVORD MOUNTAIN, CALIF.
N 3500-W11630/15
1948
AMS 2654 II-SERIES V795



Maped, edited, and published by the Geological Survey

Control by USCGS and USGS

Topography from aerial photographs by multiplex methods

Aerial photographs taken 1948 Field check 1948

Polycyclic projection 1927 North American datum

10,000-foot grid based on California coordinate system

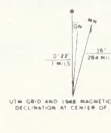
zone 5

Dashed lines indicate approximate location

Unchecked elevations are shown in brown

1000-meter Universal Transverse Mercator grid ticks

zone 11 shown in blue



CONTOUR INTERVAL 40 FEET

DASHED LINES REPRESENT AN INTERNAL CONTOURS

DATUM IS MEAN SEA LEVEL

THIS MAP COMPLEYS WITH NATIONAL MAP ACCURACY STANDARDS

FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225 OR WASHINGTON, D.C. 20242

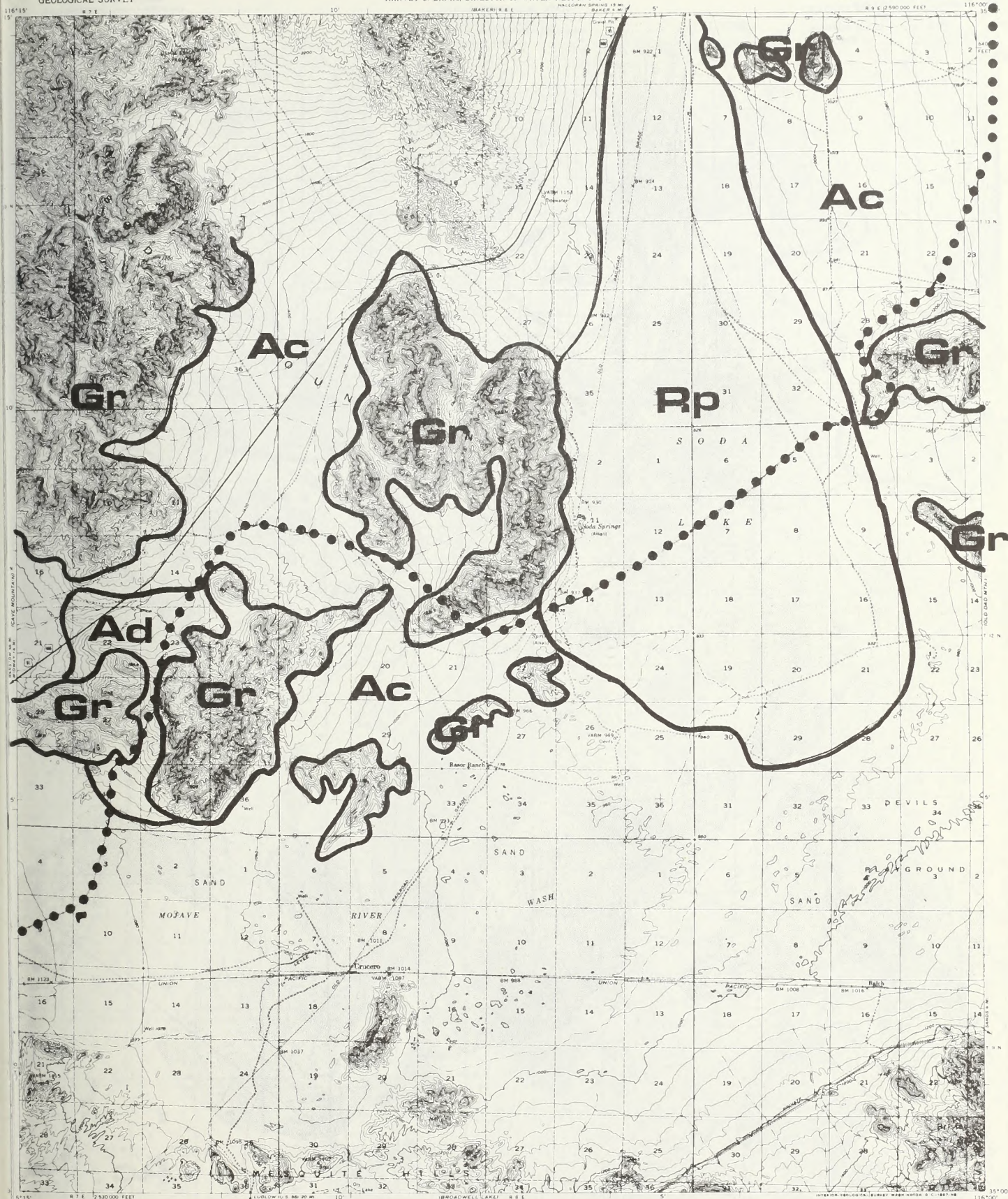
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
Medium-duty
Light-duty
Unimproved dirt
U.S. Route

CAVE MOUNTAIN, CALIF.
N3500-W11615/15

1948

AMS 2754 III-SERIES V795



Mapped, edited, and published by the Geological Survey
Control by USGS and USC&GS
Topography from aerial photographs by multiple methods
and by plane-table surveys 1956. Aerial photographs taken 1953.
Polyconic projection, 1927 North American datum.
10,000-foot grid based on California coordinate system, zone 5.
Dashed land lines indicate approximate locations.



SCALE 1:62,500
CONTOUR INTERVAL 40 FEET
DASHED LINES REPRESENT 20-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

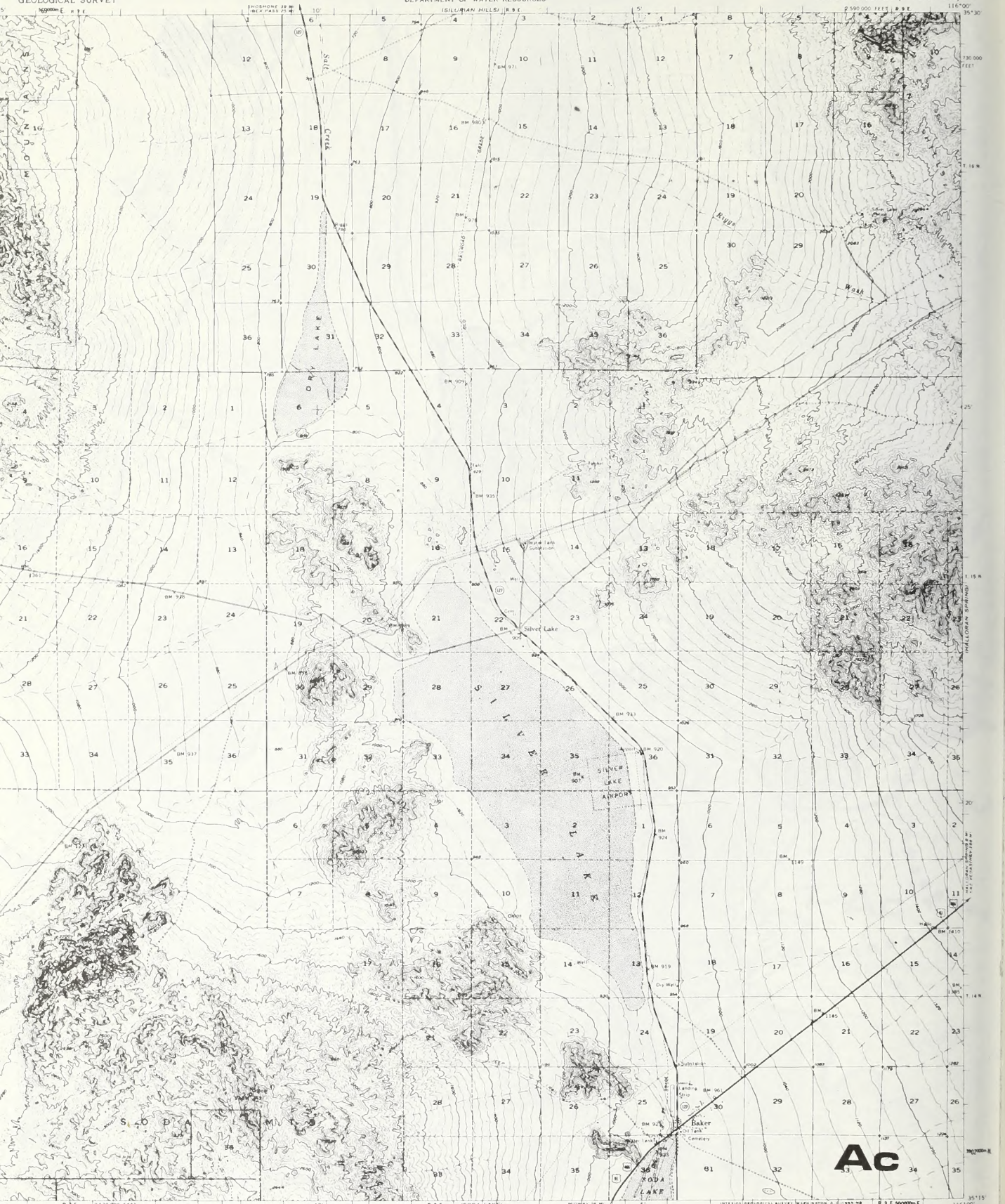


ROAD CLASSIFICATION
Heavy duty Light duty
Unimproved dirt
U.S. Route

SODA LAKE, CALIF.
N 3500—W 11600/15
1956

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A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

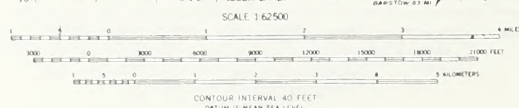
II-75



Map prepared, edited, and published by the Geological Survey
Control by USGS and USC&GS
Topography from aerial photographs by multiplex methods
and by plane-table surveys 1956. Aerial photographs taken (1953)
polytone projection. 1927 North American datum
100,000-foot grid. Part of California coordinate system, zone 5
100,000-meter Universal Transverse Mercator grid ticks,
zone 11, shown in blue.

Dashed lines indicate approximate locations
of checked elevations are shown in brown.

APPROXIMATE MEAN
DECLINATION, 1950



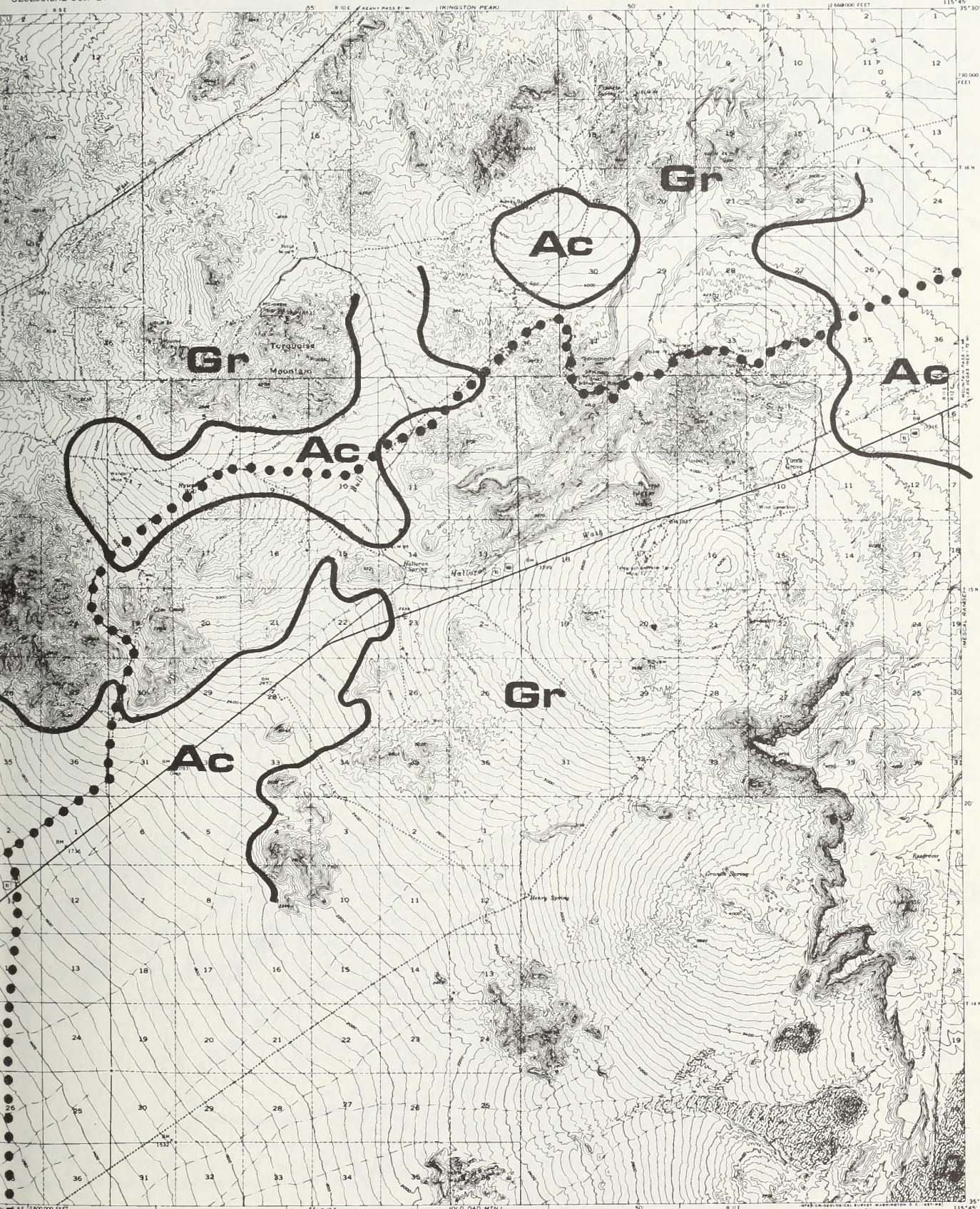
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
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A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

II-76



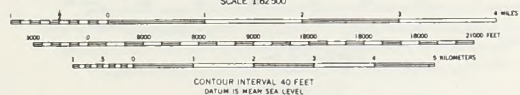
ROAD CLASSIFICATION
Heavy duty ———— Light duty ————
Medium-duty ———— Unimproved dirt ————
U.S. Route ———— State Route ————

BAKER, CALIF.
N 3515 - W 160C/15
1956



Map edited and published by the Geological Survey
by USGS and USC&GS
Photography from aerial photographs by multiplex methods
Available surveys 1956. Aerial photographs taken 1953
Projection: 1927 North American datum
Grid based on California coordinate system, zone 5
Shaded land lines indicate approximate locations
Contours are omitted in T. 14 N. - R. 11 E.
Scale of insufficient data

APPROXIMATE MEAN
DECLINATION, 1956

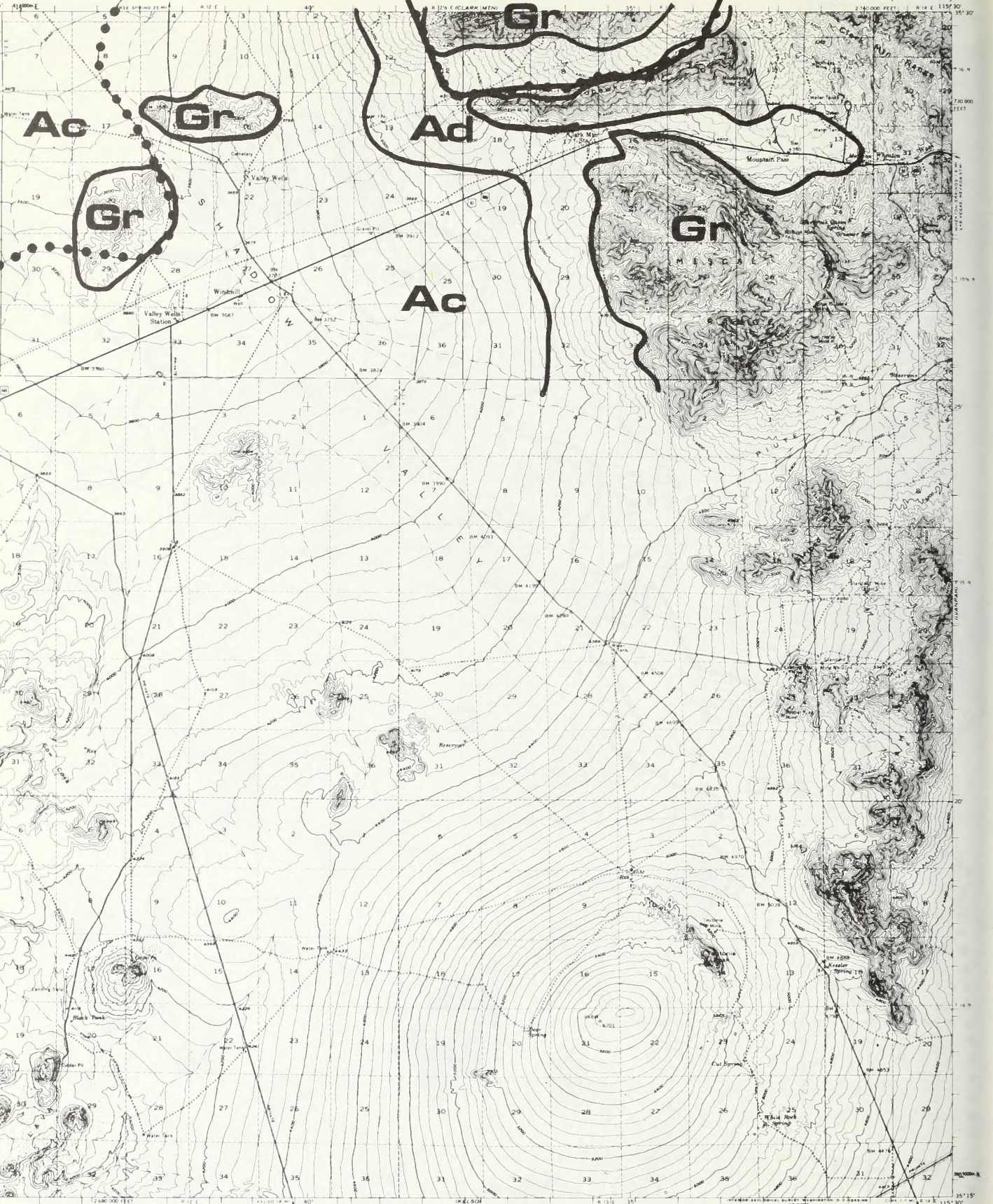


ROAD CLASSIFICATION
Heavy-duty Light-duty
Unimproved dirt U.S. Route

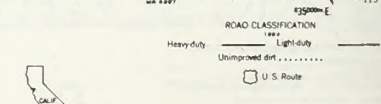
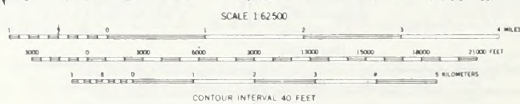
HALLORAN SPRING, CALIF.
H3515-W11545-15
1956

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II-77



Revised, edited, and published by the Geological Survey
by USGS and USC&GS
Topography from aerial photographs by multiple methods
photographs taken 1954. Advance field check 1955
Orthographic projection. 1927 North American datum.
100-foot grid based on California coordinate system, zone 5.
Shaded relief and lines indicate approximate locations.
Elevations are shown in brown.
Universal Transverse Mercator grid ticks.
1:1 shown in blue.

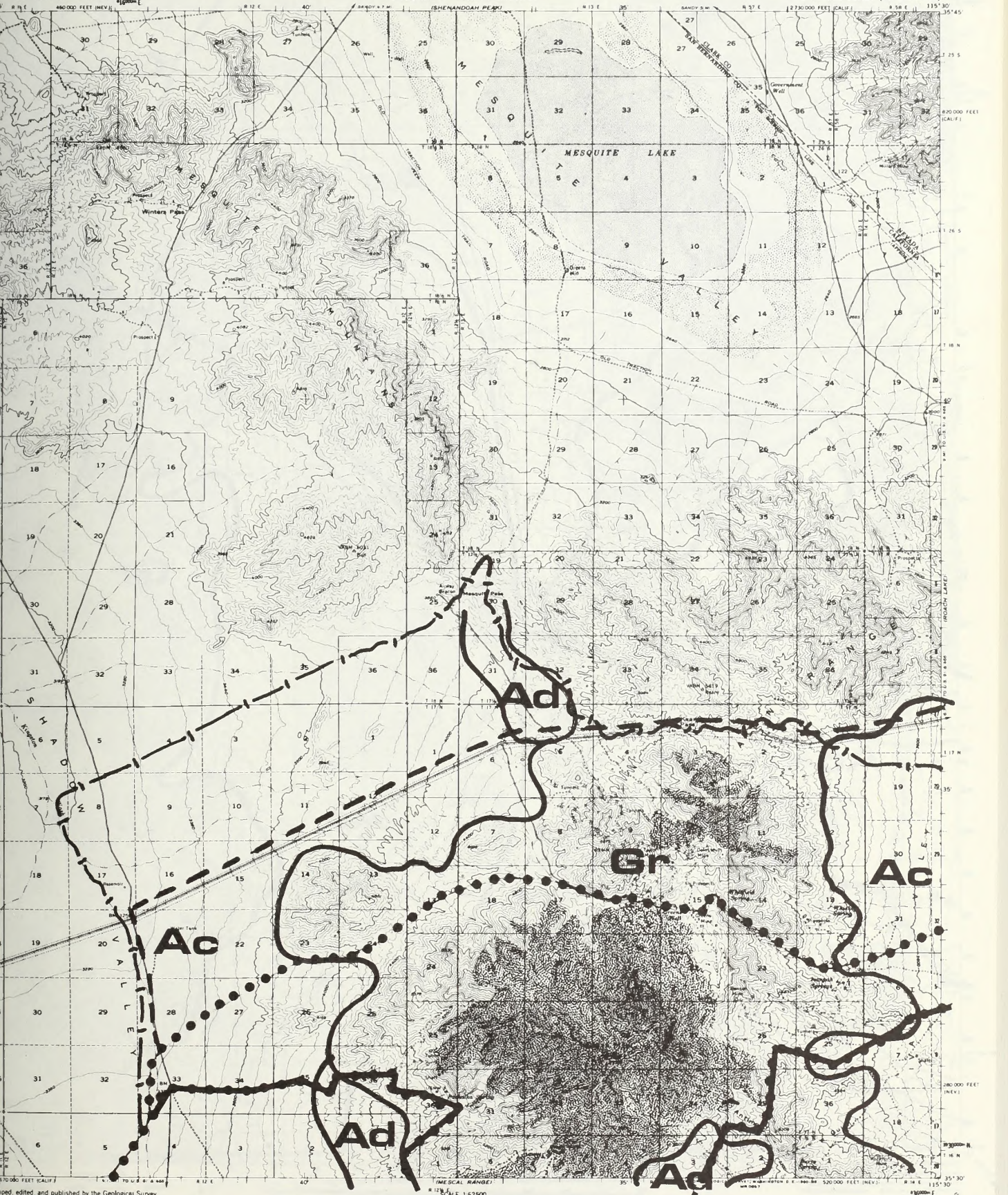


MESCAL RANGE, CALIF.
N3515-W11530/15
1955

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II-78

5



Map edited and published by the Geological Survey
Photographs by USGS and USC&GS
Photography from aerial photographs by multiplex methods
Photographs taken 1953 and 1954. Field check 1956*
Contour projection. 1927 North American datum
1000-foot g-95 based on California coordinate system, zone 5
Nevada coordinate system, east zone
Red and lines indicate approximate locations
Elevations are shown in brown
Meter elevations are shown in blue
11 shown in blue

APPROXIMATE MEAN
DECLINATION, 1986

SCALE 1:62,500
CONTOUR INTERVAL 80 FEET
DATUM IS MEAN SEA LEVEL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

ROAD CLASSIFICATION
Light duty
Unimproved dirt

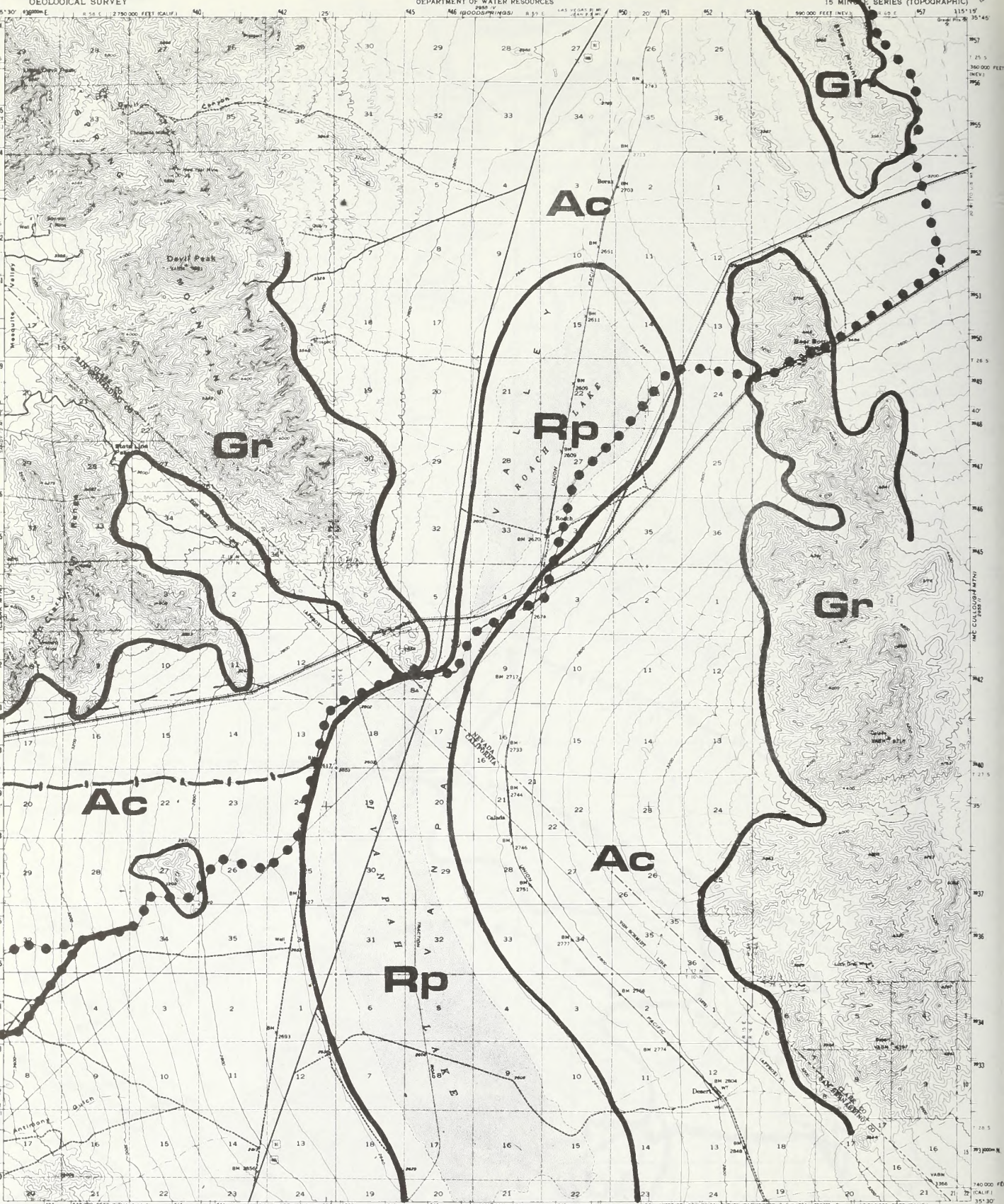
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY DENVER 28 COLORADO DR WASHINGTON, D.C.
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

II-79

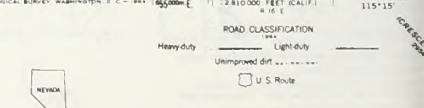
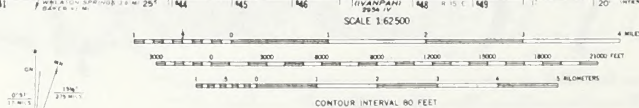
CLARK MTN. CALIF.-NEV.
N 35.30° - W 115.30°/15

1956

6



Mapped, edited, and published by the Geological Survey
Control by USGS and USC&GS
Topography from aerial photographs by multiple methods
Aerial photographs taken 1954 Advance field check 1955
Polyconic projection, 1927 North American datum
10,000-foot grid based on Nevada coordinate system, east zone
and California coordinate system, zone 5
Dashed land lines indicate approximate locations
Unchecked elevations are shown in brown
1000-meter Universal Transverse Mercator grid ticks
pink (1), shown in blue



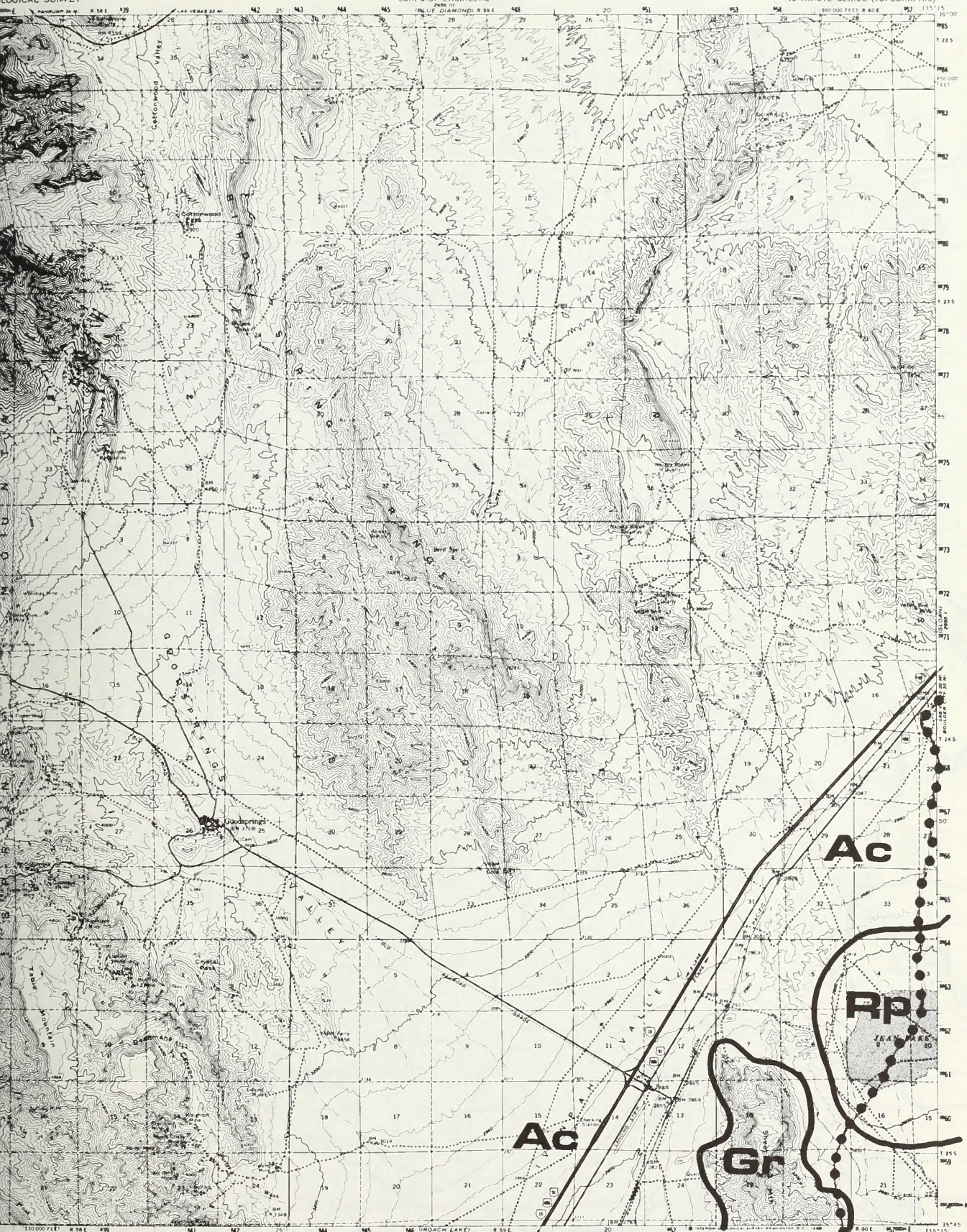
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
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A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

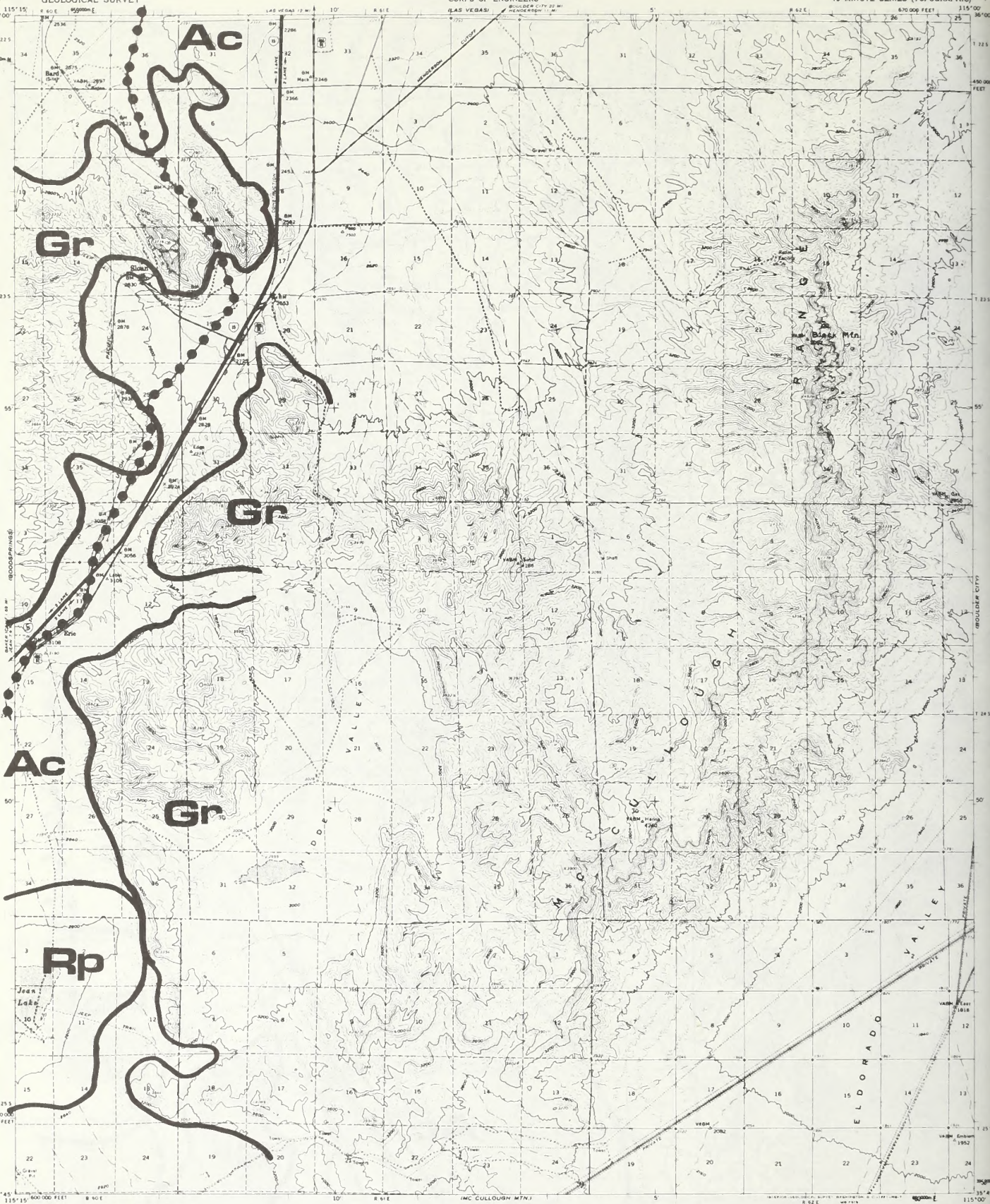
ROACH LAKE, NEV.-CALIF.

N 3530 - W 11515/15

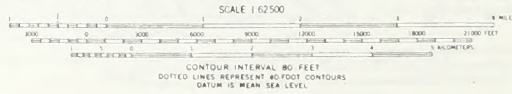
1955

AMS 2955 111-SERIES V796



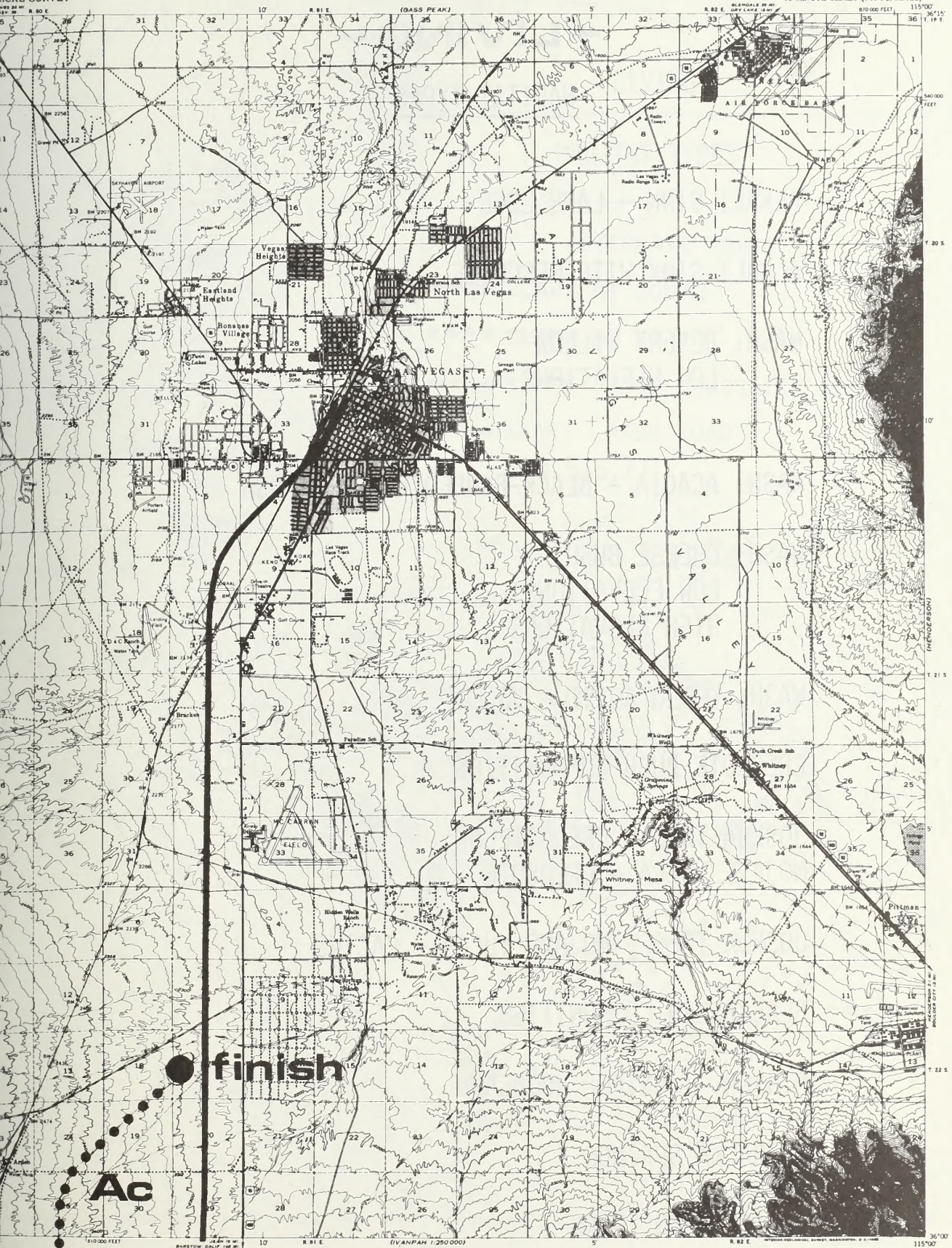


Mapped, edited, and published by the Geological Survey
Control by USGS and USCAGS
Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1958 Field check 1960
Polyconic projection, 1927 North American datum
10,000-foot grid based on Nevada coordinate system, east zone
1000-meter Universal Transverse Mercator grid ticks
zone 11 shown in blue
Dashed land lines indicate approximate locations



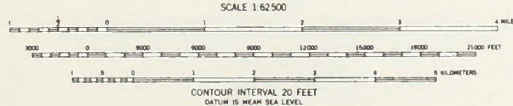
ROAD CLASSIFICATION
Heavy-duty ——— Light-duty ———
Medium-duty ——— Unimproved dirt ———
Interstate Route U.S. Route

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published by the Geological Survey
JSC&GS
photographs by Kelsch plotter methods
1952. Aerial photographs taken 1950
on Nevada coordinate system, east zone
in which only landmark buildings are shown
are approximate locations

APPROXIMATE MEAN
DECLINATION, 1952



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A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
Heavy-duty SAME AS ABOVE Light-duty SAME AS ABOVE
Medium-duty SAME AS ABOVE Unimproved dirt SAME AS ABOVE
U. S. Route State Route

QUADRANGLE LOCATION

LAS VEGAS, NEV.
N3600-W11500/15
1952

II-83

10

- LIVING -

HABITAT TYPES

ALKALI SINK - LAKE EDGE

ALKALI SINK WITH MESQUITE

WASH: DESERT WILLOW
LOW ELEVATIONS

WASH: ACACIA - BLACK-BANDED RABBIT BRUSH

WASH: CHEESE BUSH
LOW ELEVATIONS
HIGH ELEVATIONS

WASH: DESERT ALMOND - CATCLAW

CREOSOTE BUSH COMMUNITIES

JOSHUA TREE - CREOSOTE OR
MOJAVE YUCCA - CREOSOTE

JOSHUA TREE - MOJAVE YUCCA - CACTUS

BLACKBRUSH COMMUNITIES

PINYON - JUNIPER WOODLAND

PACHALKA SPRINGS

CRUCIFIXION THORN

HABITAT TYPES

ALTERNATE ROUTES

CLARK MT SOUTH

•••• CLARK MT NORTH

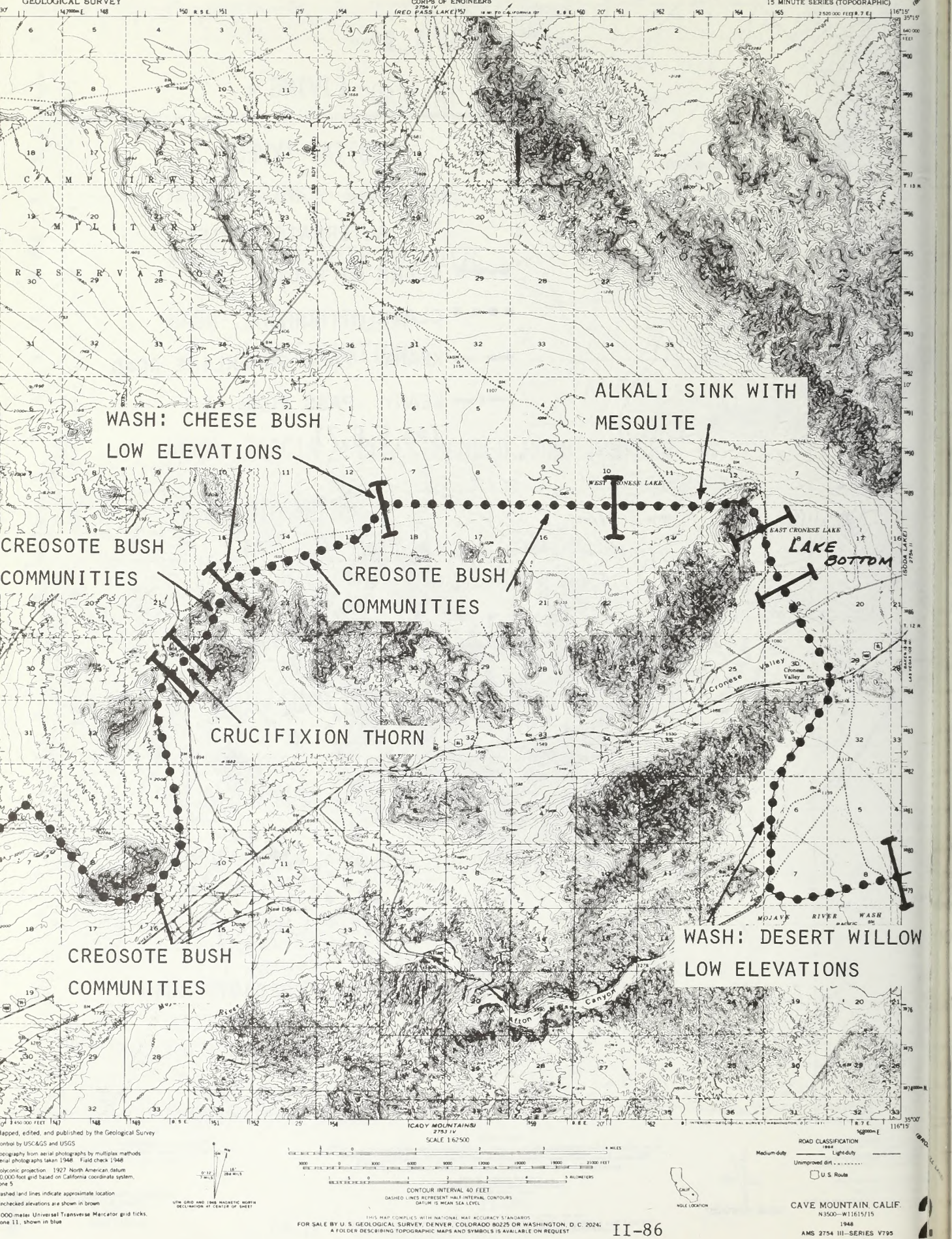
— — KEANY PASS POWERLINE ROAD

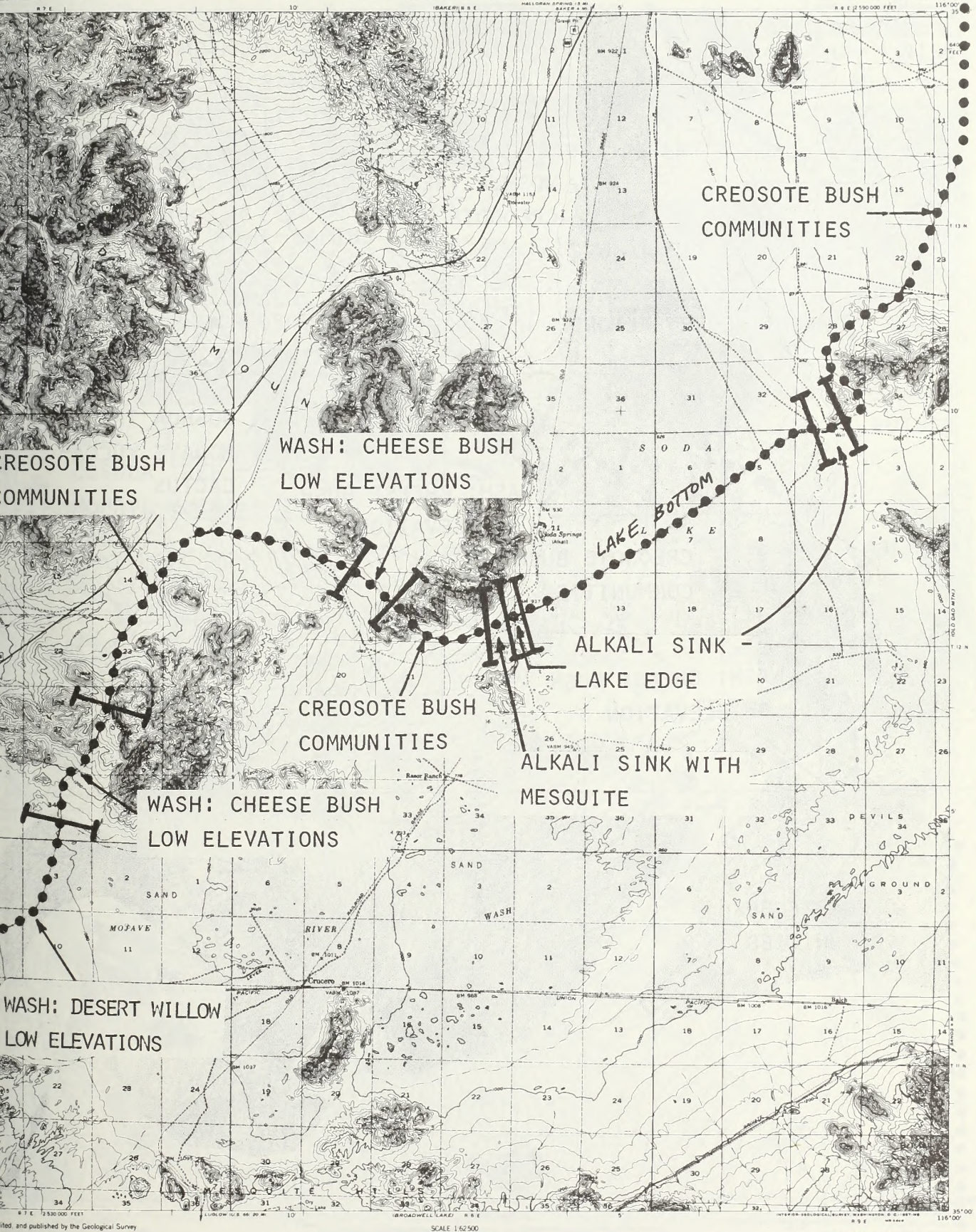
— — KEANY PASS ROAD

(PG 5,6,7)

CREOSOTE BUSH
COMMUNITIES

ALVORD MOUNTAIN, CALIF
N3500-W11630/15
1948
AMS 2854 II - SERIES V794





Map published by the Geological Survey
505 and USCAGS
from aerial photographs by multiple methods
table surveys 1956. Aerial photographs taken 1953
section, 1927 North American datum
grid based on California coordinate system, zone 5
lines indicate approximate locations

APPROXIMATE MEAN
DECLINATION, 1958

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER 2, COLORADO OR WASHINGTON, D.C.

II-87

3

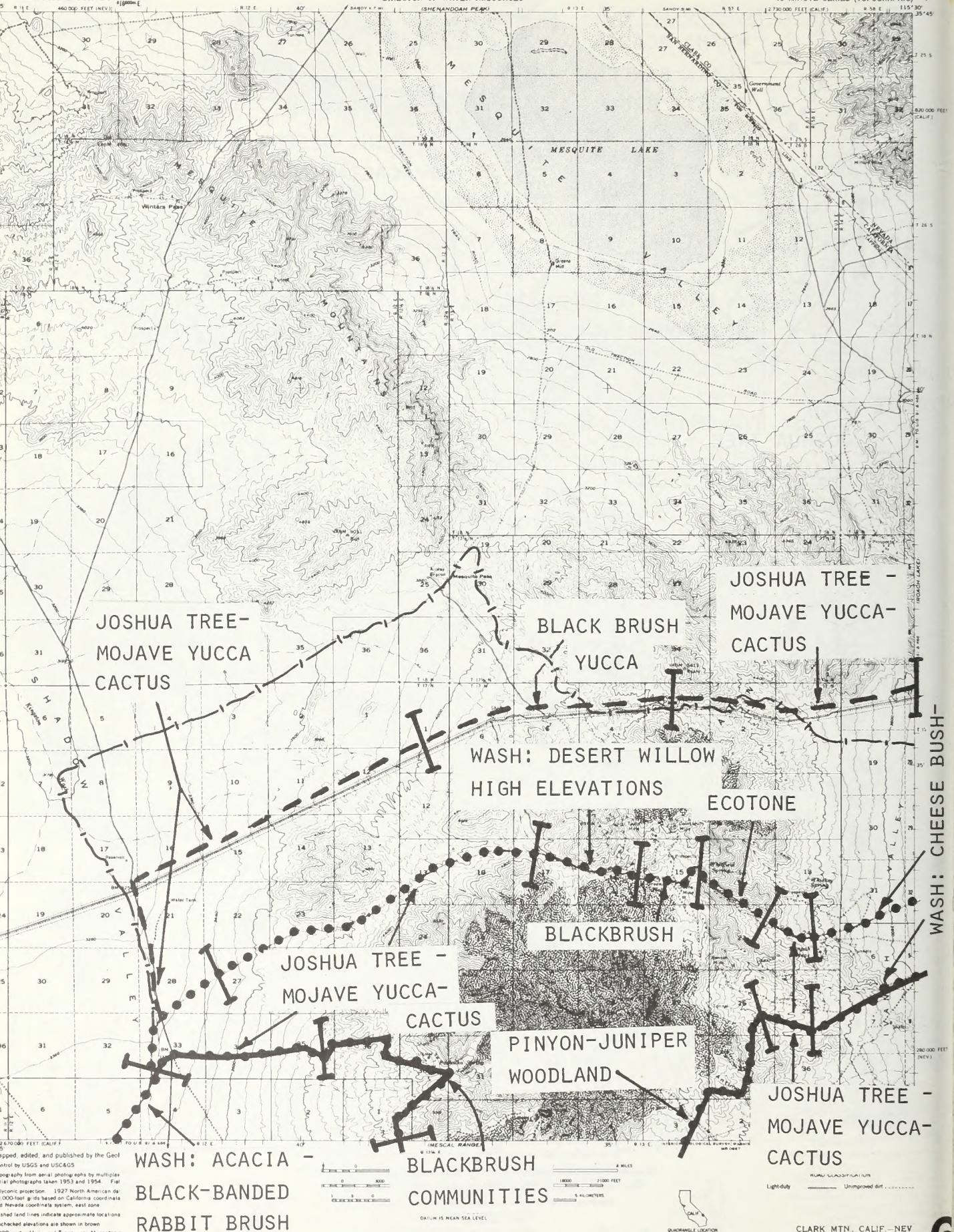


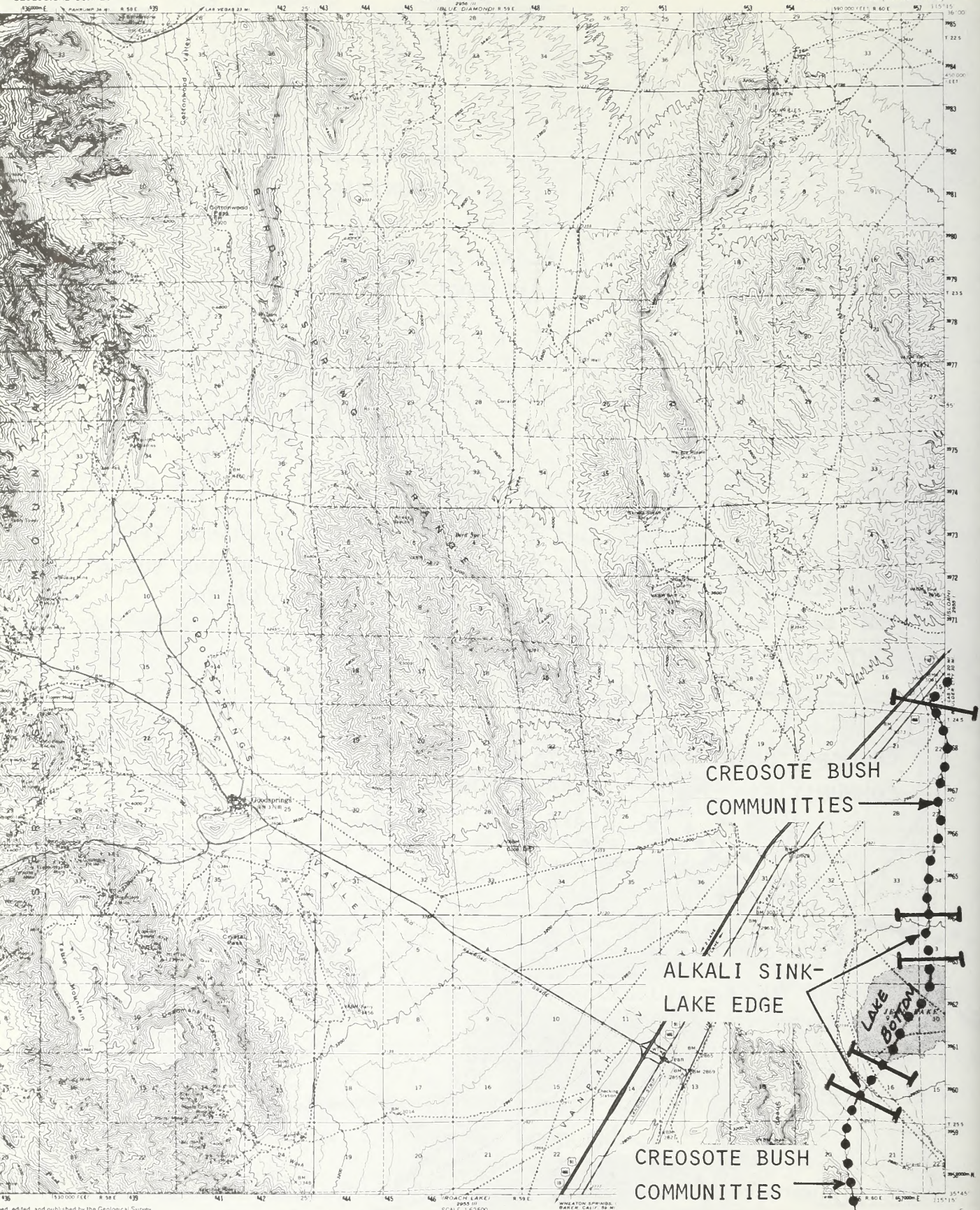


APPROXIMATE MEAN
DECLINATION 1955.

II-89

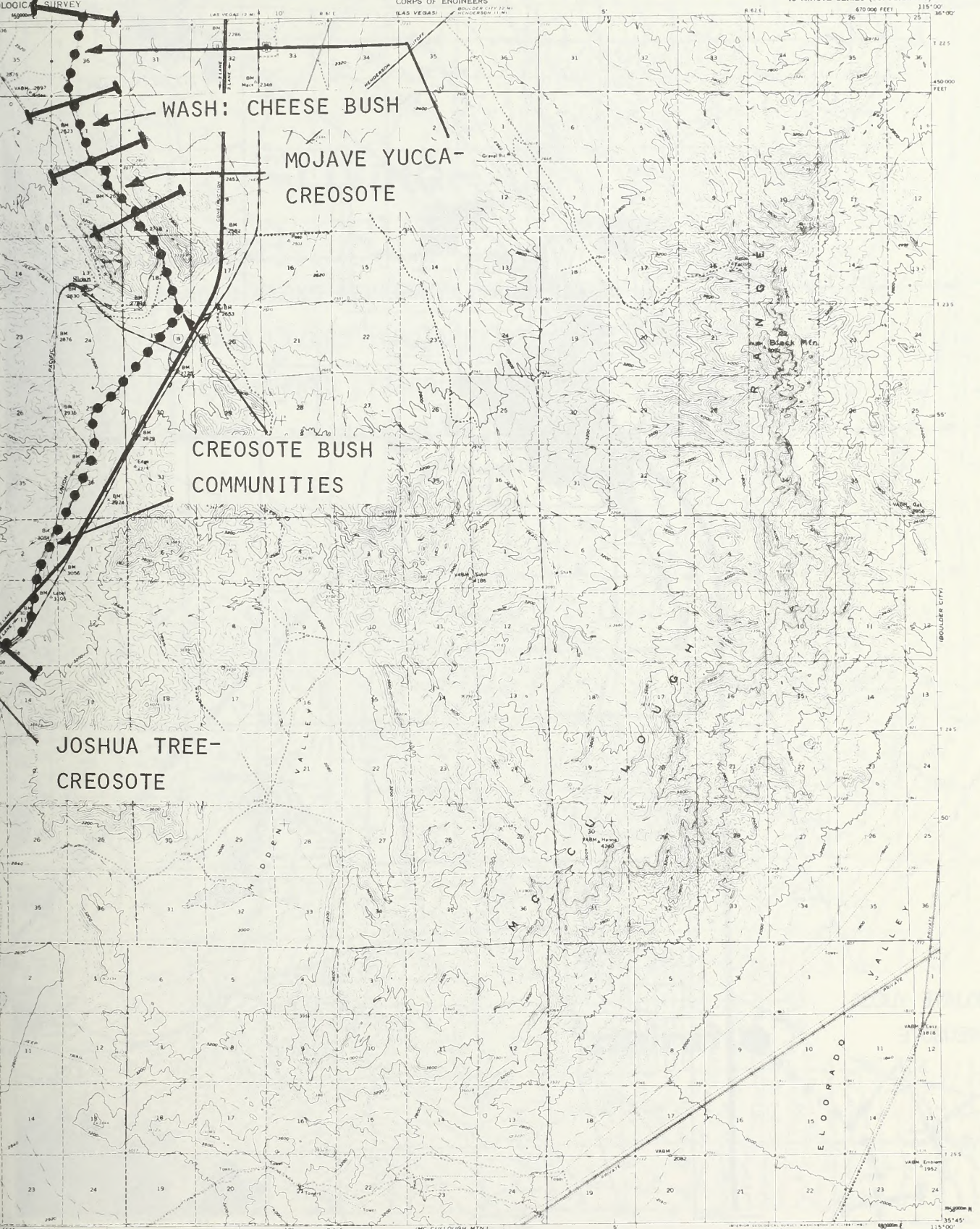
1955





ed, edited and published by the Geological Survey
by USGS and USC&GS
photographic methods
photography taken 1956. E and check 1960
and projection. 1927 North American datum
foot-g-d based on Nevada coordinate system east zone
meter Universal Transverse Mercator grid ticks
11, shown in blue
and land lines indicate approximate locations

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FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80226 OR WASHINGTON, D.C. 205
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



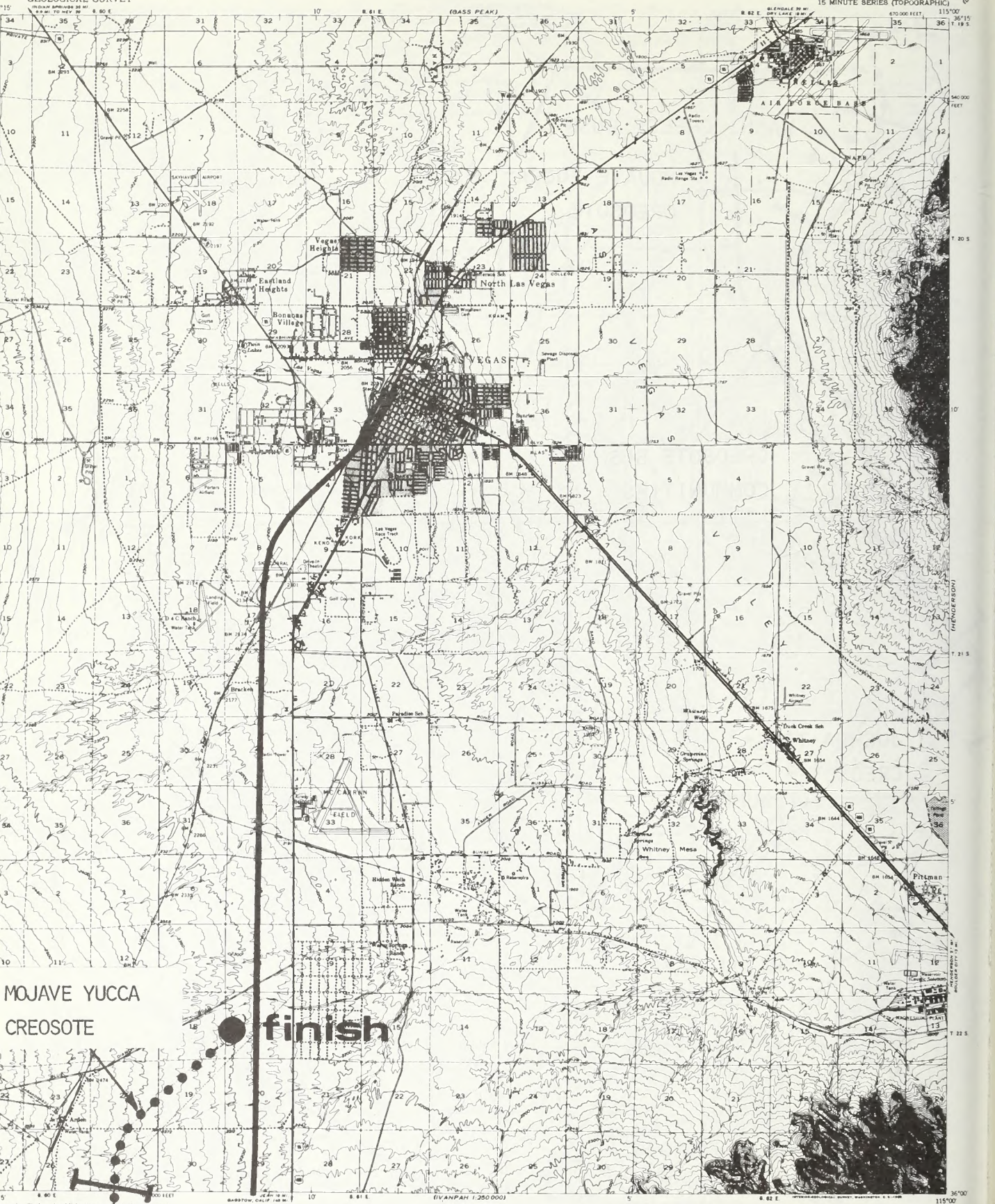
red and published by the Geological Survey
USGS and USACE
from aerial photographs by photogrammetric methods
graphs taken 1958. Field check 1960
section. 1967 North American datum
grid based on Nevada coordinate system east zone
Universal Transverse Mercator grid ticks
shown in blue
lines indicate approximate locations

SCALE 1:62500
CONTOUR INTERVAL 40 FEET
DOTTED LINES REPRESENT 40 FOOT CONTOURS
SOLID LINES REPRESENT 100 FOOT CONTOURS

ROAD CLASSIFICATION
Heavy duty
Medium duty
Light duty
Unimproved dirt
Interstate Route
U.S. Route

THIS MAP COMPLETES THE NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER 25, COLORADO OR WASHINGTON 25, D.C.
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

SLOAN, NEV.
N 3543-44-45
1960

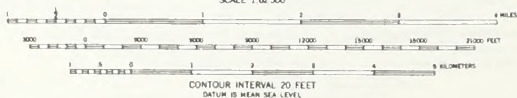


MOJAVE YUCCA
CREOSOTE

finish

Compiled, edited, and published by the Geological Survey
Control by USGS and USCGS
Photography from aerial photographs by Kelsh plotter methods
and by plane table surveys 1952. Aerial photographs taken 1950
Cylindrical projection, 1927 North American datum
1:62,500 foot grid based on Nevada coordinate system, east zone
and first indicates areas in which only landmark buildings are shown
Dashed lines indicate approximate locations

APPROXIMATE MEAN
DECLINATION, 1950



ROAD CLASSIFICATION
Heavy duty ———— Light duty ————
Medium duty ———— Unimproved dirt ————
U.S. Route ———— State Route ————

LAS VEGAS, NEV.
N 3600-W 11500/15

1952

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II-94

10

—LIVING—

REPTILES

- 3. BANDED GECKO (COLEONYX VARIEGATUS)
- 7. LEOPARD LIZARD (CROTAPHYTUS WISLIZENII)
- 8. DESERT HORNED LIZARD (PHRYNOSOMA PLATYRHINOS)
- 12. COMMON KINGSNAKE (LAMPROPELTIS GETULUS)

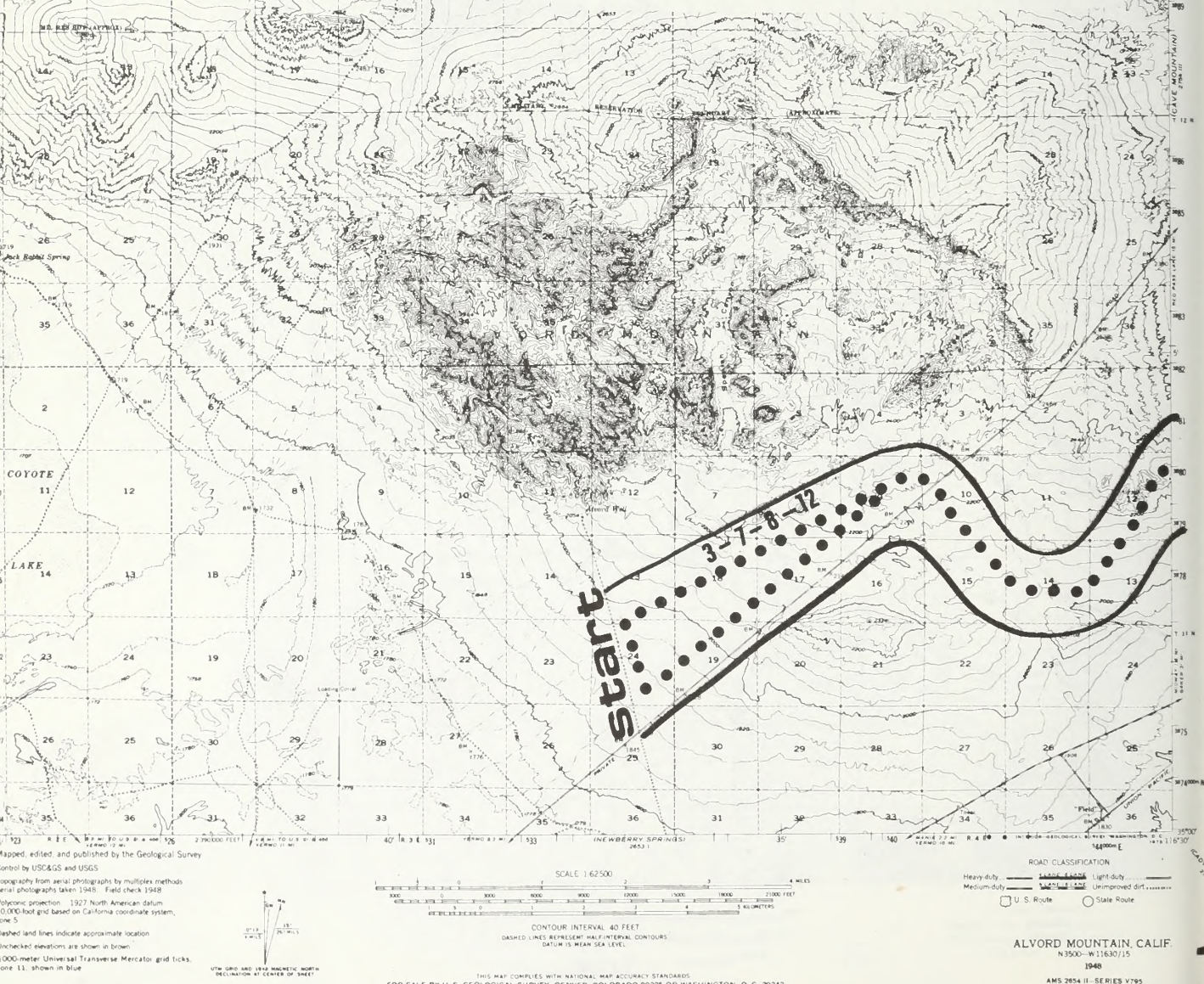
- LIVING -

REPTILES - MAMMALS - BIRDS

ALTERNATE ROUTES

- CLARK MT SOUTH
- CLARK MT NORTH
- KEANY PASS POWERLINE ROAD
- KEANY PASS ROAD

(PG 5,6,7)



Map compiled and published by the Geological Survey
control by USC&GS and USGS
topography from aerial photographs by multiple methods
aerial photographs taken 1948. Field check 1948
photographic projection. 1927 North American datum.
0.000-foot grid based on California coordinate system,
zone 5
dashed lines indicate approximate location
checked elevations are shown in brown
0.000-meter Universal Transverse Mercator grid ticks,
zone 11, shown in blue
UTM GRID AND 1948 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

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FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225 OR WASHINGTON, D.C. 20242
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ALVORD MOUNTAIN, CALIF.
N3500-W11630/15
1948
AMS 2654 II-SERIES V795

REPTILES

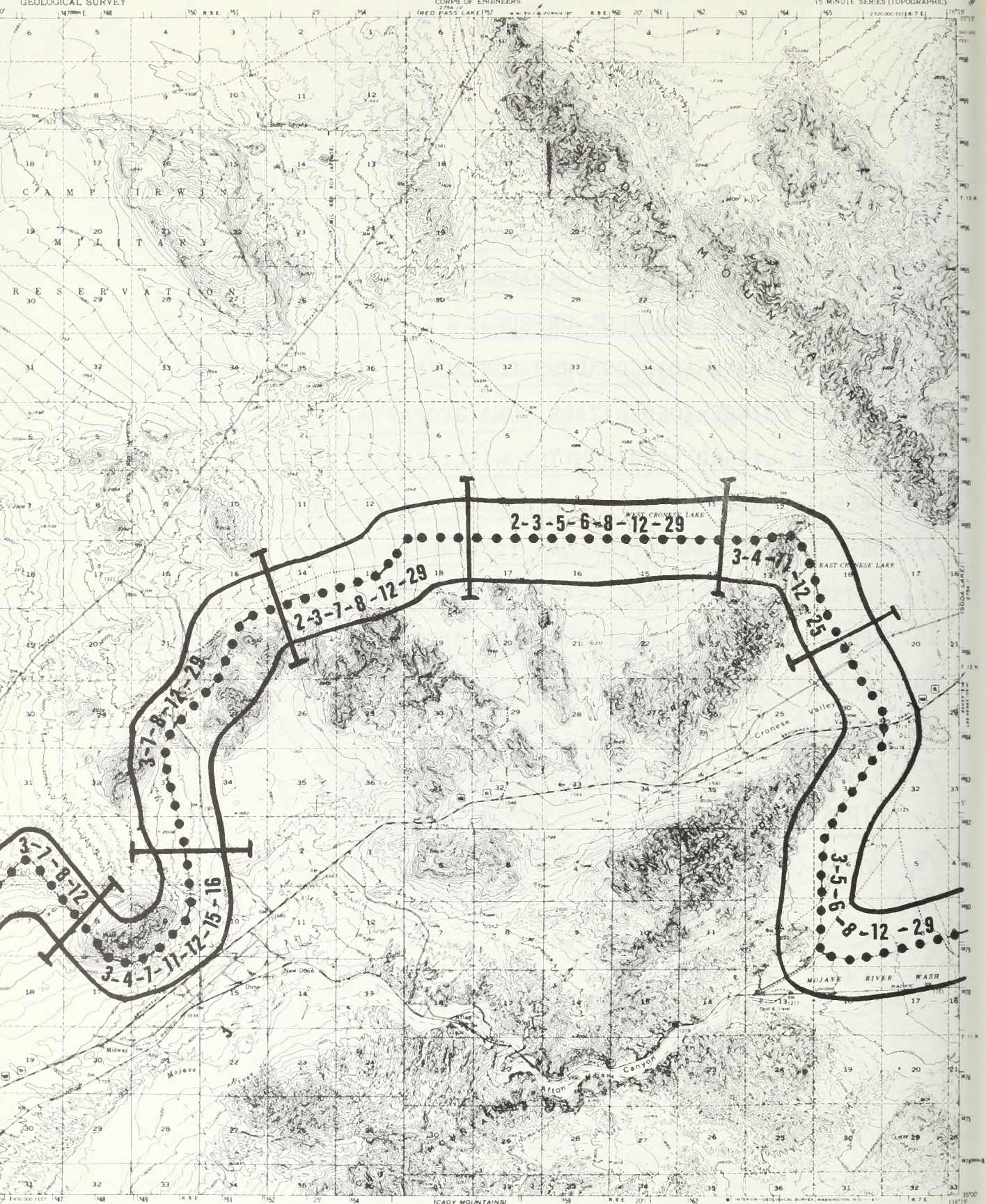
2. DESERT TORTOISE (GOPHERUS AGASSIZI)
3. BANDED GECKO (COLEONYX VARIEGATUS)
4. CHUCKWALLA (SAUROMALUS OBESUS)
5. DESERT IGUANA (DIPSOSAURUS DORSALIS)
6. MOJAVE FRINGE-TOED LIZARD (UMA SCOPARIA)
7. LEOPARD LIZARD (CROTAPHYTUS WISLIZENII)
8. DESERT HORNED LIZARD (PHRYNOSOMA PLATYRHINOS)
11. DESERT ROSY BOA (LICHANURA TRIVIRGATA GRACIA)
12. COMMON KINGSNAKE (LAMPROPELTIS GETULUS)
15. SPECKLED RATTLESNAKE (CROTALUS MITCHELLI)
16. COLLARED LIZARD (CROTAPHYTUS COLLARIS)

MAMMALS

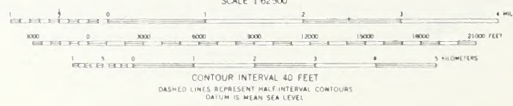
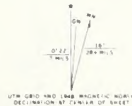
25. RINGTAIL CAT (BASSARISCUS ASTUTUS)

BIRDS

29. VERDIN (AURIPARUS FLAVICEPS)



Map prepared, edited, and published by the Geological Survey
under contract to the U.S. Army Corps of Engineers
Topography from aerial photography by multiframe methods
Final photography taken 1948. Field check 1948.
Projection: 1927 North American datum
1:250,000 scale based on California coordinate system.
Contours and lines indicate approximate location
of features. Contour interval 40 feet.
Unimproved dirt shown in blue.



ROAD CLASSIFICATION
Medium-duty Light-duty
Unimproved dirt
U.S. Route



THIS MAP COMPLETES WITH NATIONAL MAP ACCURACY STANDARDS
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II-98

CAVE MOUNTAIN, CALIF.
N3500-W11615/15
1948
ANS 2754 III-SERIES V795

2

REPTILES

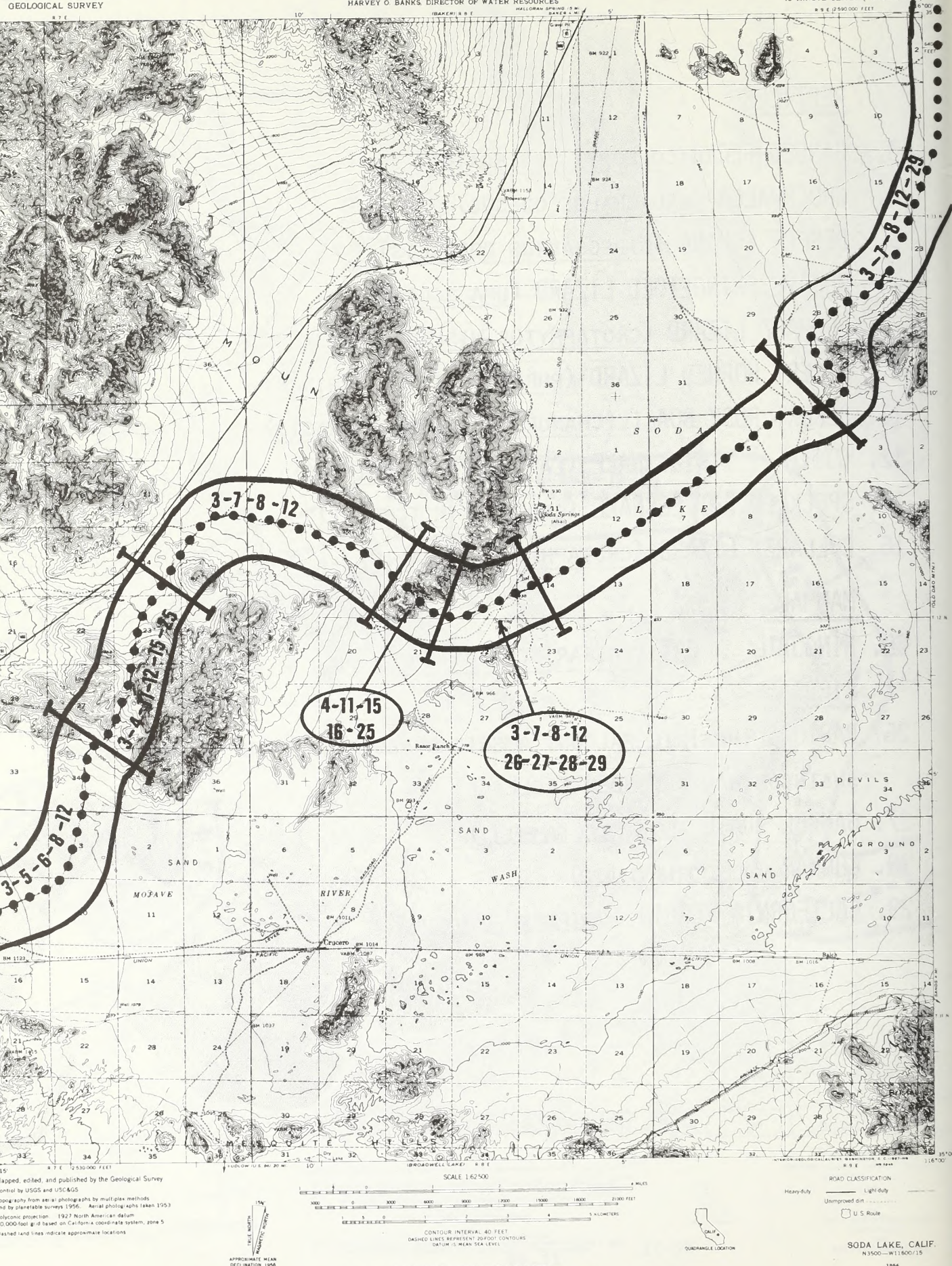
3. BANDED GECKO (COLEONYX VARIEGATUS)
4. CHUCKWALLA (SAUROMALUS OBESUS)
5. DESERT IGUANA (DIPSOSAURUS DORSALIS)
6. MOJAVE FRINGETOED LIZARD (UMA SCOPARIA)
7. LEOPARD LIZARD (CROTAPHYTUS WISLIZENII)
8. DESERT HORNED LIZARD (PHRYNOSOMA PLATYRHINOS)
11. DESERT ROSY BOA (LICHANURA TRIVIRGATA GRACIA)
12. COTTON KINGSNAKE (LAMPROPALTIS GETULUS)
15. SPECKLED RATTLESNAKE (CROTOLUS MITCHELLI)
16. COLLARED LIZARD (CROTAPHYTUS COLLARIS)

MAMMALS

25. RINGTAIL CAT (BASSARISCUS ASTUTUS)

BIRDS

26. RAPTORS (PRAIRIE FALCON, AMERICAN KESTREL, SHARP-SHINNED HAWK, SWAINSON HAWK, GOLDEN EAGLE)
27. GAMBEL QUAIL (LOPHORTYX GAMBELII)
28. CHUKAR (ALECTORIS CHUKAR)
29. CALIFORNIA VERDIN (AURIPARUS FLAIRCIPS)



REPTILES

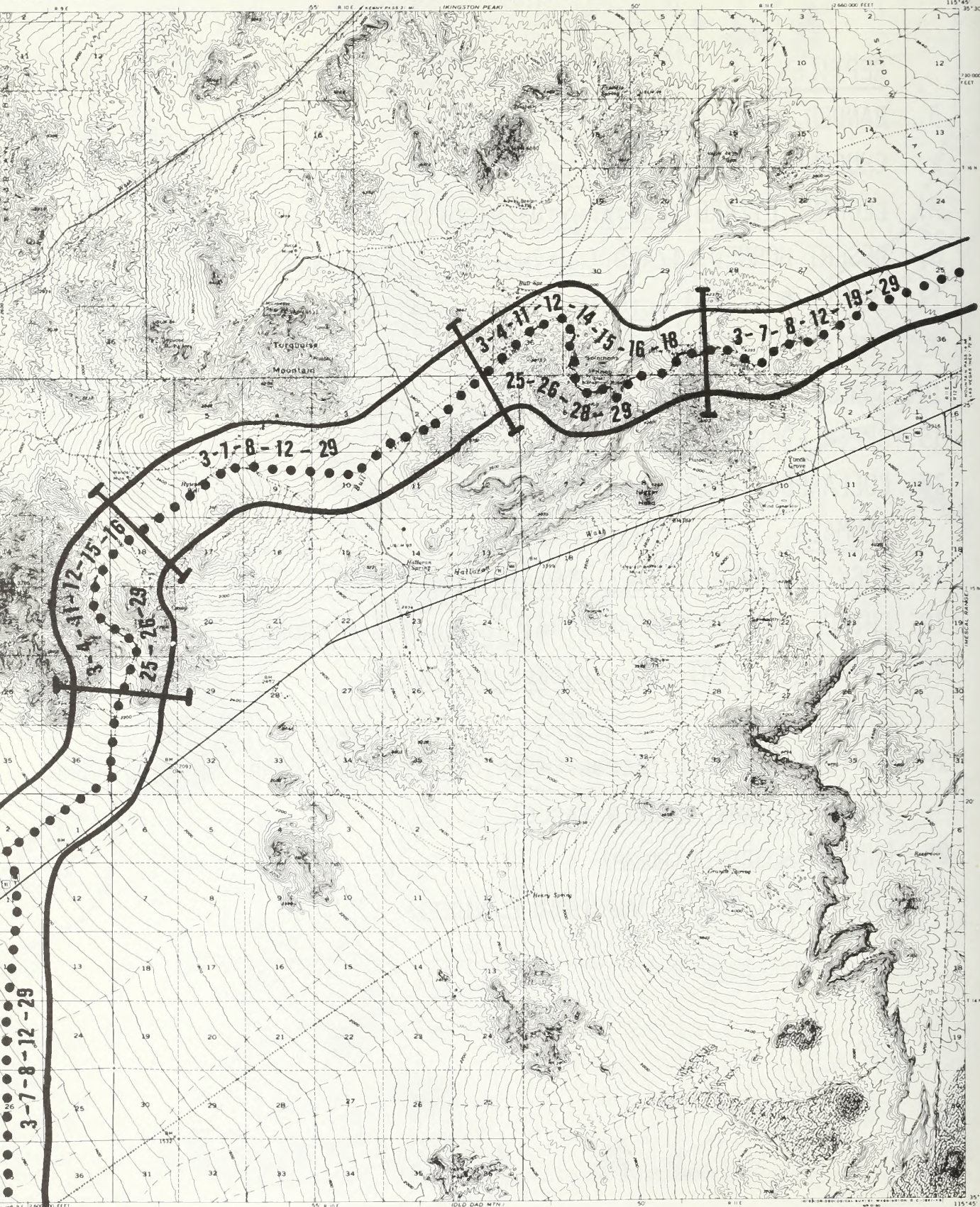
- 3. BANDED GECKO (COLEONYX VARIEGATUS)
- 4. CHUCKWALLA (SAUROMALUS OBESUS)
- 7. LEOPARD LIZARD (CROTAPHYTUS WISLIZENII)
- 8. DESERT HORNED LIZARD (PHRYNOSOMA PLATYRHINOS)
- 11. DESERT ROSY BOA (LICHANURA TRIVIRGATA GRACIA)
- 12. ~~COMMON~~ KINGSNAKE (LAMPROPELTIS GETULUS)
- 14. SONORA LYRE SNAKE (TRIMORPHODON LAMBDA)
- 15. SPECKLED RATTLESNAKE (CROTALUS MITCHELLI)
- 16. COLLARED LIZARD (CROTAPHYTUS COLLARIS)

MAMMALS

- 18. ROCK SQUIRREL (CITELLUS VARIEGATUS)
- 19. CHISEL-TOOTHED KANGAROO RAT (DIPODOMYS MICROPS)
- 25. RINGTAIL CAT (BASSARISCUS ASTUTUS)

BIRDS

- 26. RAPTORS (PRAIRIE FALCON, AMERICAN KESTREL, SHARP-SHINNED HAWK,
SWAINSON HAWK, GOLDEN EAGLE)
- 28. CHUKAR (ALECTORIS CHUKAR)
- 29. CALIFORNIA VERDIN (AURIPARUS FLAVICEPS)



Compiled, edited, and published by the Geological Survey
by USGS and USCAGS
Photography from aerial photographs by multiplex methods
Available surveys 1956. Aerial photographs taken 1953
Projection: 1927 North American datum
Grid based on California coordinate system, zone 5
Red lines indicate approximate locations
Scale is omitted in T. 14 N. R. 31 E.
Source of insufficient data

APPROXIMATE MEAN
DECLINATION, 1956



CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL

THIS MAP COMPLETES WITH NATIONAL MAP ACCURACY STANDARDS
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ROAD CLASSIFICATION
Heavy-duty ——— Light-duty ———
Unimproved dirt ———
U.S. Route

HALLORAN SPRING, CALIF.
N3515-W11545/15
1956

11-102

4

REPTILES

3. BANDED GECKO (COLEONYX VARIEGATUS)
7. LEOPARD LIZARD (CROTAPHYTUS WISLIZENII)
8. DESERT HORNED LIZARD (PHRYNOSOMA PLATYRHINOS)
9. GILBERT'S SKINK (EUMECES GILBERTI)
10. GILA MONSTER (HELODERMA SUSPECTUM)
11. DESERT ROSY BOA (LICHANURA TRIVIRGATA GRACIA)
12. COMMON KINGSNAKE (LAMPROPELTIS GETULUS)
13. UTAH BLACK-HEADED SNAKE (TANTILLA PLANICEPS UTAHENSIS)
14. SONORA LYRE SNAKE (TRIMORPHODON LAMBDA)
15. SPECKLED RATTLESNAKE (CROTALUS MITCHELLI)
16. COLLARED LIZARD (CROTAPHYTUS COLLARIS)

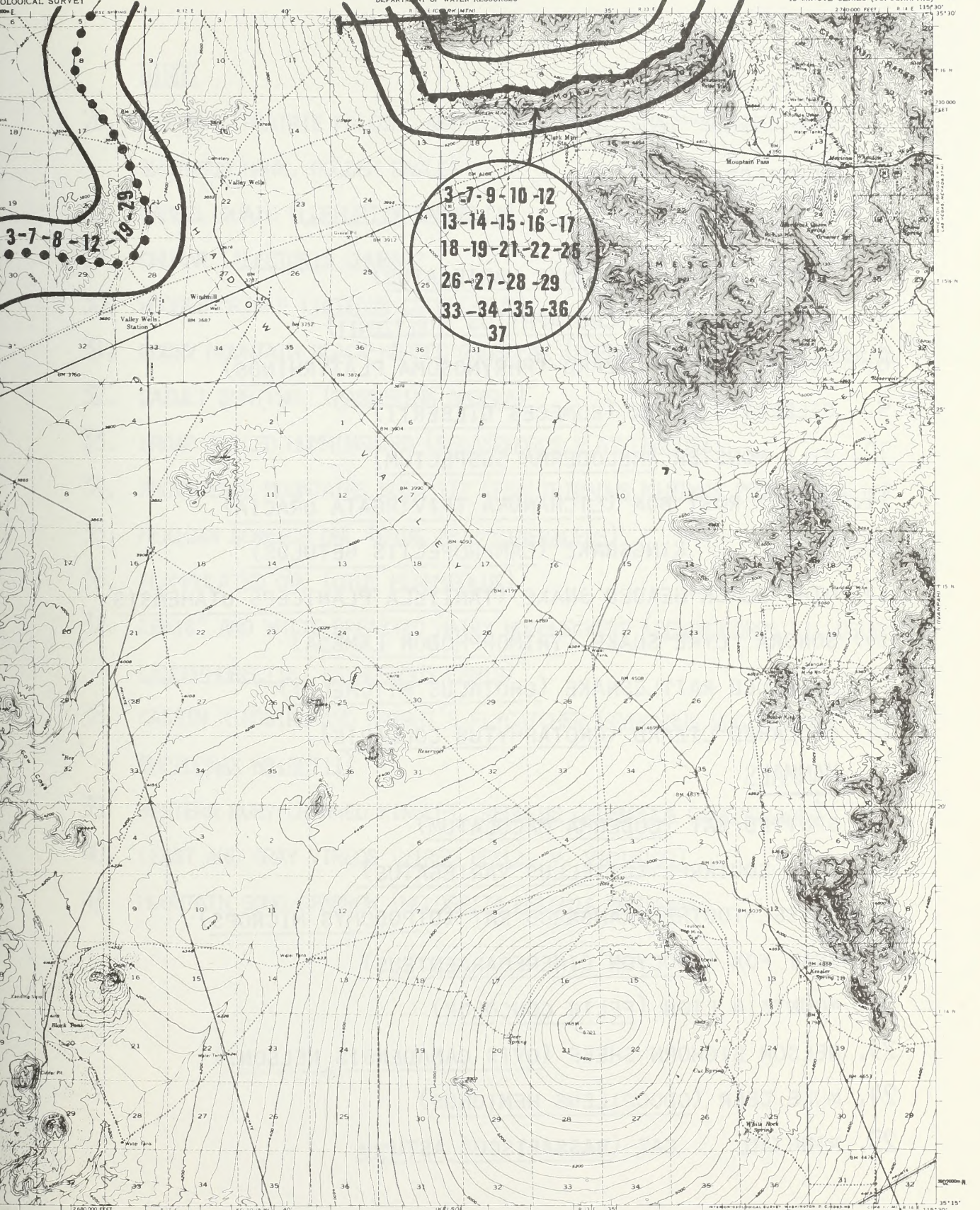
MAMMALS

17. SPOTTED BAT (EUDERMA MACULATUM)
18. ROCK SQUIRREL (CITELLUS VARIEGATUS)
19. CHISEL-TOOTHED KANGAROO RAT (DIPODOMYS MICRIPS)
21. GRAY FOX (UROCYON CINEREOARGENTEUS)
22. MOUNTAIN LION (FELIS CONCOLOR)
24. MULE DEER (ODOCOILEUS HEMIONUS)
25. RING-TAILED CAT (BASSARISCUS ASTUTUS)

BIRDS

26. RAPTORS (PRAIRIE FALCON, AMERICAN KESTREL, SHARP-SHINNED HAWK, SWAINSON HAWK, GOLDEN EAGLE)
27. GAMBEL QUAIL (LOPHORTYX GAMBELII)

- 28. CHUKAR (ALECTORIS CHUKAR)
- 29. CALIFORNIA VERDIN (AURIP FLAVICEPS)
- 33. BROAD-TAILED HUMMINGBIRD (SELASPHORUS PLATYCEREUS)
- 34. PROVIDENCE MOUNTAINS BUSH-TIT (PSALTRIPARUS MINIMUS)
- 35. MEXICAN SCREECH OWL (OTUS ASIO CINERACEUS)
- 36. FLAMMULATED OWL (OTUS FLAMMEOLUS)
- 37. WOODPECKERS (LEWIS AND WHITE-BREASTED HAIRY)



Revised and published by the Geological Survey
1955 and USG&S

From aerial photographs by multiple methods
Photographs taken 1954. Advance field check 1955
Projection. 1927 North American datum
Grid based on California coordinate system, zone 5
Lines indicate approximate locations
Elevations are shown in brown

Universal Transverse Mercator grid ticks,
shown in blue

APPROXIMATE MEAN
DECLINATION, 1955

SCALE 1:62,500
0 1 2 3 4 MILES
0 1000 2000 3000 4000 5000 FEET
0 1 2 3 4 KILOMETERS
CONTOUR INTERVAL 40 FEET
(DATUM IS MEAN SEA LEVEL)



ROAD CLASSIFICATION
Heavy-duty
Light-duty
Unimproved dirt
U. S. Route

MESCAL RANGE, CALIF.
N3515-W11530/15
1955

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
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A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

II-105

5

REPTILES

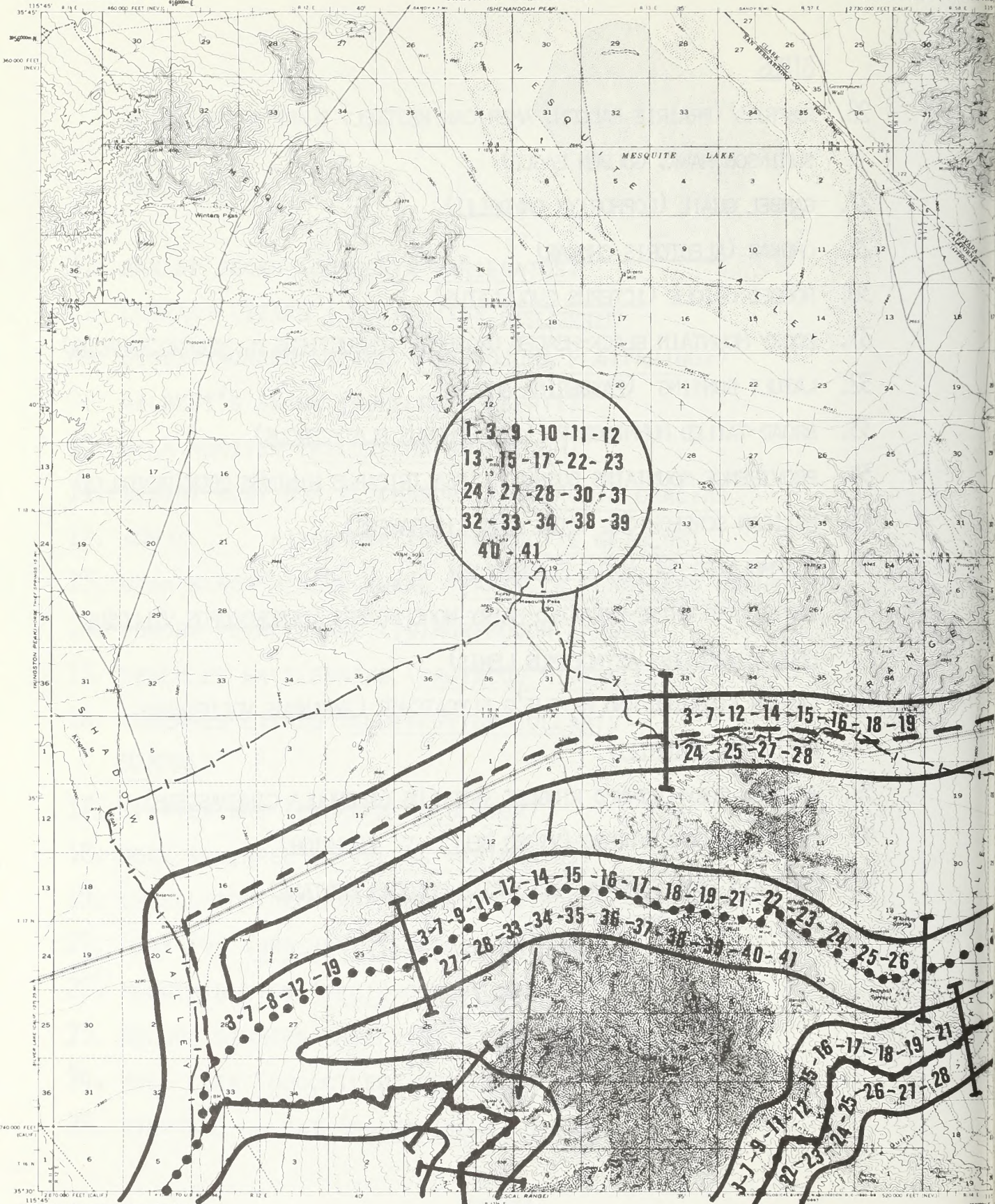
3. BANDED GECKO (COLEONYX VARIEGATUS)
7. LEOPARD LIZARD (CROTAPHYTUS WISLIZENII)
8. DESERT HORNED LIZARD (PHRYNOSOMA PLATYRHINOS)
9. GILBERT'S SKINK (EUMECES GILBERTI)
10. GILA MONSTER (HELODERMA SUSPECTUM)
11. DESERT ROSY BOA (LICHANURA TRIVIRGATA GRACIA)
12. COMMON KINGSNAKE (LAMPROPELTIS GETULUS)
13. UTAH BLACK-HEADED SNAKE (TANTILLA PLANICEPS UTAHENSIS)
14. SONORA LYRE SNAKE (TRIMORPHODON LAMBDA)
15. SPECKLED RATTLESNAKE (CROTALUS MITCHELLI)
16. COLLARED LIZARD (CROTAPHYTUS COLLARIS)

MAMMALS

17. SPOTTED BAT (EUDERMA MACULATUM)
18. ROCK SQUIRREL (CITELLUS VARIEGATUS)
19. CHISEL-TOOTHED KANGAROO RAT (DIPODOMYS MICROPS)
21. GRAY FOX (UROCYON CINEREOARGENTEUS)
22. MOUNTAIN LION (FELIS CONCOLOR)
23. NELSON BIGHORN SHEEP (OVIS CANADENSIS NELSONI)
24. MULE DEER (ODOCOILEUS HEMIONUS)
25. RINGTAIL CAT (BASSARISCUS ASTUTUS)

BIRDS

26. RAPTORS (PRAIRIE FALCON, AMERICAN KESTREL, SHARP-SHINNED HAWK, SWAINSON HAWK, GOLDEN EAGLE)
27. GAMBEL QUAIL (LOPHORTYX GAMBELII)
28. CHUKAR (ALECTORIS CHUKAR)
30. HOODED ORIOLE (ICTERUS CUCULLATUS)
31. ROCKY MOUNTAIN BLACK-HEADED GROSBEAK (PHEUCTICUS M. MELANOCEPHALUS)
32. LAZULI BUNTING (PASSERINA AMOENA)
33. BROAD-TAILED HUMMINGBIRD (SELASPHORUS PLATYCERCUS)
34. PROVIDENCE MOUNTAINS BUSH-TIT (PSALTRIPARUS MINIMUS PROVIDENTIALIS)
35. MEXICAN SCREECH OWL (OTUS ASIO CINERACEUS)
36. FLAMMULATED OWL (OTUS FLAMMEOLUS)
37. LEWIS' AND WHITE-BREASTED HAIRY WOODPECKERS (DENDROCOPOS VILLOSUS LEUCOTHORECTIS, ASYNDESMUS LEWIS)
38. CASSIN KINGBIRD AND WRIGHT'S FLYCATCHER (TYRANNUS VOCIFERANS, EMPIDONAX WRIGHTII)
39. WESTERN RUBY-CROWNED KINGLET (REGULUS CALENDULA CINERASCENS)
40. LEAST AND GRAY VIREOS (VIREO BELLI, V. VICINIOR)
41. MOUNTAIN SONG SPARROW (MELOSPIZA MELODIA MONTANA)



Maped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography from aerial photographs by multiplex methods

Aerial photographs taken 1953 and 1954. Field check 1956

Photocopy projection 1927 North American datum

10,000-foot grids based on California coordinate system, zone 5

and Nevada coordinate system, east zone

Chained land lines indicate approximate locations

Unclassified elevations are shown in brown

1000 meter Universal Transverse Mercator grid ticks,

zone 11, shown in blue



SCALE 1:62,500

0 1 2 3 4 5 6 7 8 9 10 MILES

0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

0 1 2 3 4 5 6 7 8 9 10 KILOMETERS

CONTOUR INTERVAL 80 FEET

DATUM IS MEAN SEA LEVEL

ROAD CLASSIFICATION

Light duty

Unimproved dirt

QUADRANGLE LOCATION

CLARK MTN. CALIF.-NEV

N 3530-W 11510/15

1956

REPTILES

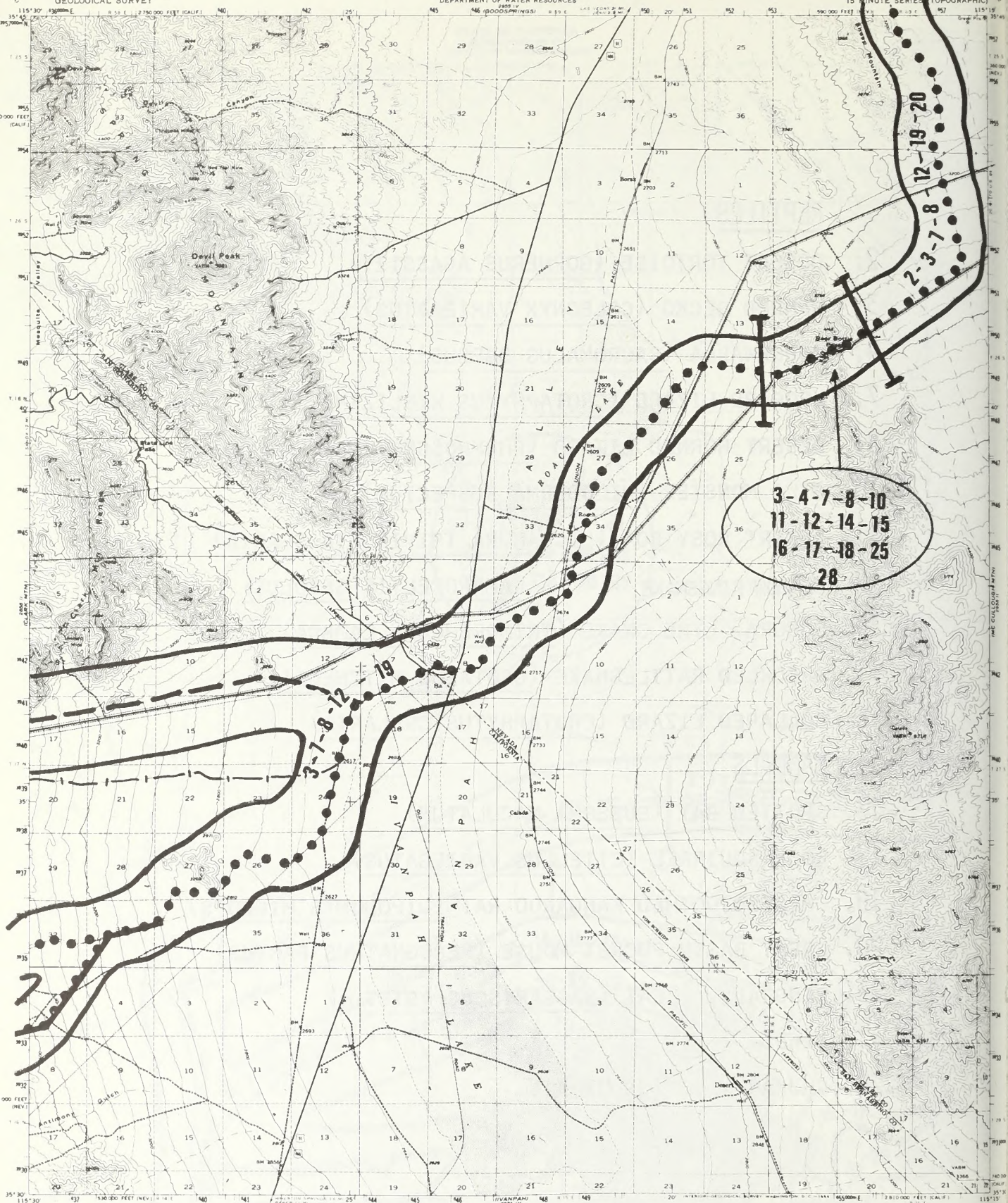
2. DESERT TORTOISE (GOPHERUS AGASSIZI)
3. BANDED GECKO (COLEONYX VARIEGATUS)
4. CHUCKWALLA (SAUROMALUS OBESUS)
7. LEOPARD LIZARD (CROTAPHYTUS WISLIZENII)
8. DESERT HORNED LIZARD (PHRYNOSOMA PLATYRHINOS)
10. GILA MONSTER (HELODERMA SUSPECTUM)
11. DESERT ROSY BOA (LICHANURA TRIVIRGATA GRACIA)
12. COMMON KING SNAKE (LAMPROPELTIS GETULUS)
14. SONORA LYRE SNAKE (TRIMORPHODON LAMBDA)
15. SPECKLED RATTLESNAKE (CROTALUS MITCHELLI)
16. COLLARED LIZARD (CROTAPHYTUS COLLARIS)

MAMMALS

17. SPOTTED BAT (EUDERMA MACULATUM)
18. ROCK SQUIRREL (CITELLUS VARIEGATUS)
19. CHISEL-TOOTHED KANGAROO RAT (DIPODOMYS MICROPS)
20. GREAT BASIN POCKET MOUSE (PEROGNATHUS PARVUS)
25. RINGTAIL CAT (BASSARISCUS ASTUTUS)

BIRDS

28. CHUKAR (ALECTORIS CHUKAR)



Map prepared and published by the Geological Survey
Control by USGS and USC&GS
Topography from aerial photographs by multiple methods
Aerial photographs taken 1954. Advance field check 1955
Projection: 1927 North American datum
10,000-foot grid based on Nevada coordinate system, east zone
and California coordinate system, zone 5
Dashed lines indicate approximate locations
Unchecked elevations are shown in brown
1,000 meter Universal Transverse Mercator grid ticks,
zone 11, shown in blue



ROAD CLASSIFICATION
Heavy duty
Light duty
Unimproved dirt
U.S. Route

ROACH LAKE, NEV.-CALIF.
N3530-W11515/15
1955
AMS 2955 III-SERIES V708

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A HOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

REPTILES

2. DESERT TORTOISE (GOPHERUS AGASSIZI)
3. BANDED GECKO (COLEONYX VARIEGATUS)
7. LEOPARD LIZARD (CROTAPHYTUS WISLIZENII)
8. DESERT HORNED LIZARD (PHRYNOSOMA PLATYRHINOS)
12. COMMON KINGSNAKE (LAMPROPELTIS GETULUS)

MAMMALS

19. CHISEL-TOOTHED KANGAROO RAT (DIPODOMYS MICROPS)
20. GREAT BASIN POCKET MOUSE (PEROGNATHUS PARVUS)

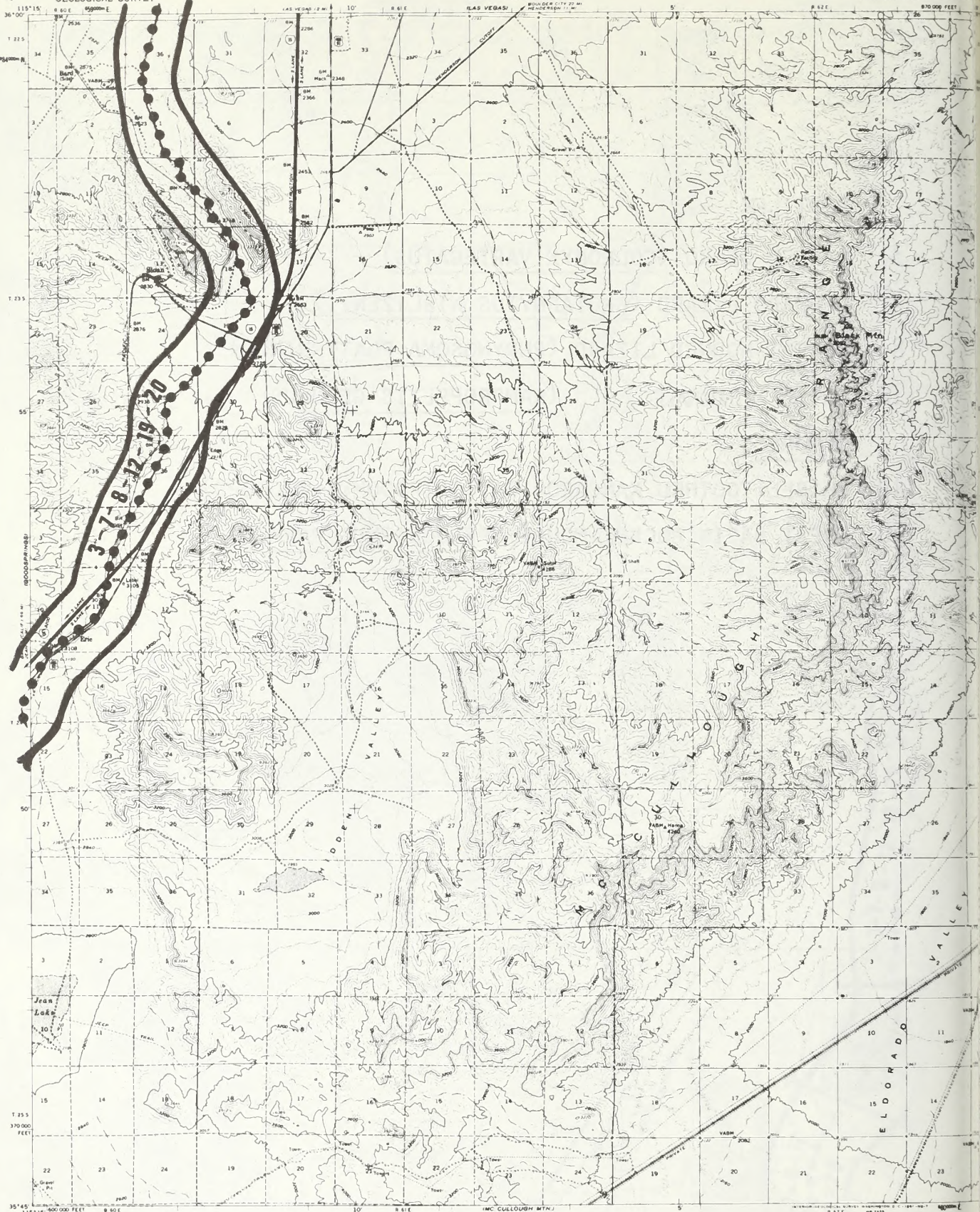


REPTILES

- 3. BANDED GECKO (COLEONYX VARIEGATUS)
- 7. LEOPARD LIZARD (CROTAPHYTUS WISLIZENII)
- 8. DESERT HORNED LIZARD (PHRYNOSOMA PLATYRHINOS)
- 12. COMMON KINGSNAKE (LAMPROPELTIS GETULUS)

MAMMALS

- 19. CHISEL-TOOTHED KANGAROO RAT (DIPODOMYS MICROPS)
- 20. GREAT BASIN POCKET MOUSE (PEROGNATHUS PARVUS)



Mapped, edited, and published by the Geological Survey
Control by USGS and USACE

Topography from aerial photography by photogrammetric methods
Aerial photography taken 1958 Field check 1960

Polyconic projection, 1927 North American datum
10,000-foot grid based on Nevada coordinate system, east zone
1000-meter Universal Transverse Mercator grid lines,
zone 11, shown in blue

Dashed line lines indicate approximate locations

SCALE 1:62,500

CONTOUR INTERVAL 80 FEET
DOTTED LINES REPRESENT 40-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

ROAD CLASSIFICATION

Heavy duty Light duty

Medium duty Unimproved dirt

Interstate Route U.S. Route

QUADRANGLE LOCATION

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A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

II-114

SLOAN, NV
N 3545-W 1150

1960

REPTILES

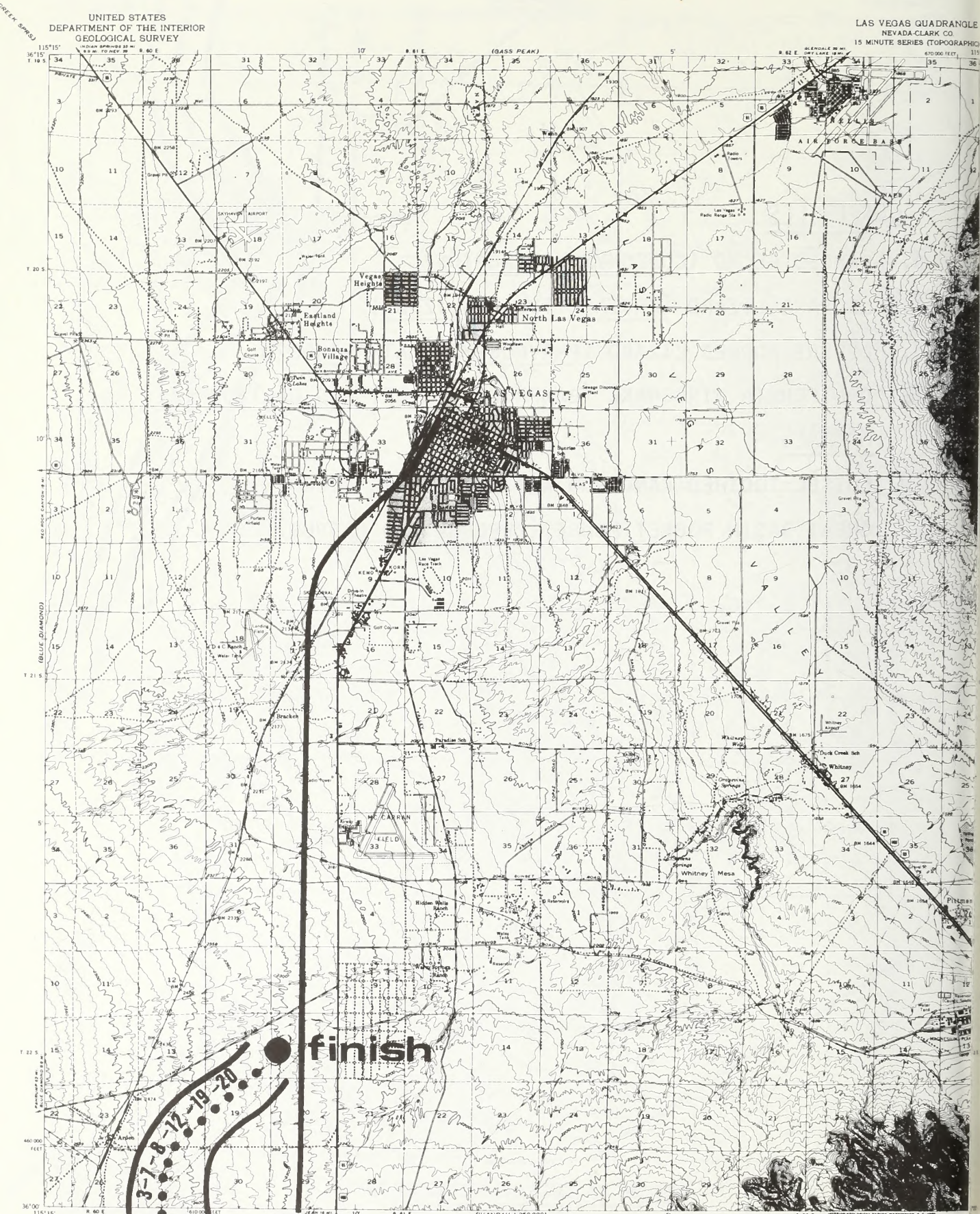
- 3. BANDED GECKO (COLEONYX VARIEGATUS)
- 7. LEOPARD LIZARD (CROTAPHYTUS WISLIZENII)
- 8. DESERT HORNED LIZARD (PHRYNOSOMA PLATYRHINOS)
- 12. CALIFORNIA KINGSNAKE (LAMPROPELTIS GETULUS CALIFORNIAE)

MAMMALS

- 19. CHISEL-TOOTHED KANGAROO RAT (DIPODOMYS MICROPS)
- 20. GREAT BASIN POCKET MOUSE (PEROGNATHUS PARVUS)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LAS VEGAS QUADRANGLE
NEVADA-CLARK CO.
15 MINUTE SERIES (TOPOGRAPHIC)



finish

3-7-8-12-19-20

SCALE 1:62,500

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

ROAD CLASSIFICATION
Heavy-duty Lane & Lane Light-duty
Medium-duty Lane & Lane Unimproved dirt
U.S. Route State Route

QUADRANGLE LOCATION

LAS VEGAS, NE
N 3600-W 11500/15
1952

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A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

II-116

III. ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

A. Non-Living

1. Topography

The impact of the race on topography will be a secondary and relatively microcosmic effect due to the displacement or movement of soil and rock fragments and the damage to or loss of vegetation. At individual critical locations, potential gullyng of soil caused by concentration of runoff in tracks may hasten geologic erosion and downstream deposition. The process is discussed more fully in the impacts on the soil resources. The areas most subject to this type of impact are in the long, dry washes and on the steeper slopes of the hilly and mountainous areas.

2. Water

The proposed race will have no direct impact on water supplies since the course is not charted through or near existing sources that are put to beneficial uses.

An indirect impact will be that of adding turbidity to existing occasional overland flows where cycle tracks have concentrated runoff on the fine textured soils. These occasional overland flows most likely would occur during late winter or early spring. The impact of concentrated overland flow and increased velocity will be most apparent on staging and camping areas where soil is compacted and vegetation is decimated or sometimes eliminated over several acres. At individual locations along the course similar compaction, concentration, and velocity increase will be caused by vehicles dropping abruptly into dry washes from fine textured soil terraces or benches.

The impact will be that of increasing the geologic process and the addition of fine soil particles to the valley fills. The amount or rate of increase over that presently existing was not actually determined, but is estimated to be negligible.

The impact of the tracks in the long drainages or dry washes is not expected to be detrimental since these have few fine soil particles (clays and silts) and the more evenly sized grains do not compact readily to form water concentrating channels.

Degradation of ground water supplies, as a result of the race, is estimated to be negligible.

3. Soils

Surface conditions of soils will be disrupted by the motor-cycles. Some soils will be compacted. Situations will be created which promote erosion, especially on slopes where channeling can be expected. Where trails cross washes, banks will be broken down, causing erosion potential with subsequent down-wash sedimentation. General soil disruption will be attended by secondary adverse impacts upon dependent plants and animals.

Desert playas are a surface feature, with a flat, generally smooth surface formed by deposition of fine silts and clays suspended in intermittent floodwaters. The surfaces are already marred by vehicle tracks and clay production areas in the south portion of East Cronese Lake. On playas, an additional marring of an undetermined amount will occur.

Motorcycle tracks and ruts across wet playas can be expected to be visible for 30 or more years. Wheel tracks made in the early 1930's in Soda Lake are visible today. But predicting whether the playa would be wet on the day of the race is difficult. One year in seven the rainfall during November exceeds 1.3 inches.

The course passes through 15 miles of playas (east and west Cronese, Soda, Ivanpah, Roach, and Jean Lakes). About 93 miles of the course lies on unconsolidated alluvials of the valleys as shown mainly as Ac on the General Soil map. About 17 miles passes through old (Tertiary-Pleistocene) unconsolidated alluvials flanking mountain areas. These occur in portions of areas mapped as Ac and Ad. About 30 miles passes through hardrock exposures of mountain areas, primarily pre-cenozoic granitics and marine sedimentary rocks. These are areas mapped as Gr as shown on General Soil map.

Loss of the soil creating dust problems downwind of the race area will create areawide impacts. Additionally, if the course is wet, an increased amount of compaction will occur. Effects of soil compaction on vegetation and wildlife productivity are described in Section III-B.

Additional vehicle impact will occur from the necessity to pick up injured riders in certain emergency situations by the most expeditious route possible. Interviews with rescue squad members indicate that this is a minor consideration for the following reasons. 1. To reach the victim as quickly as possible, roads are used to the nearest point of intersection with the course and then the course is used to lead the rescue vehicle to the scene of the accident. 2. Field ambulances are stationed at intervals along the route, therefore the shortest distance to the scene of an accident is directly down the course. 3. Once the injured rider is picked up evacuation by roads and trails is preferred to cross-country travel for the comfort and safety of the injured rider. 4. Field ambulance operators would be reluctant to risk breakage or delays which would put a needed vehicle out of service.

Six areas of specific soil impact will occur.

a. The Staging Area - The impact in this area will be to break up the crust which acts as a protective cover and change the soil surface texture, leaving it susceptible to wind erosion. The staging area encompasses an estimated 810 acres of which previous events have disturbed approximately 730. This event is expected to disturb an additional 16 acres of soil surface within the 810-acre staging area. This lies all on Ma soil association with a high susceptibility to compaction.

b. Razor Road Gas Stop - The impact is as discussed for the staging area. The area of influence at this stop is 110 acres of which 100 acres are previously disturbed. This race will impact an additional 2 acres of Ac soil association with a moderate susceptibility to compaction.

c. Valley Wells Gas Stop - The impact is as discussed for the staging area. This lies on a nearly flat, less sandy surface than the Razor Road stop. Therefore, the area of influence is larger, encompassing approximately 600 acres. Of the 600 acres an estimated 540 acres have been previously disturbed. This event is expected to impact an additional 12 acres of soil surface within the area of influence. This acreage lies on an Ac soil association with a moderate susceptibility to compaction.

d. Stateline Gas Stop - The impact is as discussed for the staging area. This stop area encompasses approximately 80 acres. Of the 80 acres an estimated 70 acres have been previously disturbed. This event is expected to impact an additional 2 acres of soil surface within the area of influence. The 2 acres lie on an Rp soil association with a high susceptibility to compaction when wet.

e. The Finish Area - The impact is as discussed for the staging area. The area of influence around the finish encompasses an estimated 640 acres of which approximately 575 acres have been previously disturbed. The event is expected to impact an additional 13 acres within the area of influence. The 13 acres lie on the Ac soil association and have a moderate susceptibility to compaction.

f. The Racecourse - The racecourse has an area of influence encompassing an estimated 5,265 acres of which an estimated 2,015 acres have been previously disturbed. This event is expected to impact an additional 433 acres within the area of influence. The estimated distribution of that acreage lies across several soil associations as follows:

Ac - 50 acres - Moderate susceptibility to compaction

Ad - 150 acres - Moderate susceptibility to compaction

Cj - 8 acres - Low susceptibility to compaction

Gr - 10 acres - Low susceptibility to compaction

Ma - 60 acres - High susceptibility to compaction

Rp - 155 acres - High susceptibility when wet

Moderate susceptibility when dry

Along the racecourse, compaction is a more significant impact than in the previously discussed areas. Many motorcycles will traverse the same trail segments. The same impacts discussed for the

staging area apply here along with the increased likelihood of compaction from multiple vehicle use of certain trail segments. Table III-A-1 summarizes the estimated acreage subject to compaction by soil association.

4. Air

a. Gaseous Contaminants

The race will result in temporary increase in the level of oxidants and carbon monoxide near the start, pit, and finish areas along the course. Overall increase of gaseous matter within the air basins will be insignificant.

b. Particulate Matter

Dust and blow sand conditions will be created along certain segments of the course. The impact on the air at I-15 freeway crossings could be temporarily significant. It could distract motorists' attention from their driving. It might be extreme enough under heavy wind conditions to dangerously restrict motorists' vision. However, such a condition is unpredictable with available information.

The companion table and maps indicate wind direction and force, soil conditions, and probable level of impact, i.e., high, medium, and low dust and blow sand potentials created by the race. (See Table III-A-2.) This table also shows that about 70 percent of the course has moderate or more severe wind erosion potential.

The Nevada Department of Human Resources, Division of Health, Bureau of Environmental Health has informed us that the race will violate the Nevada and Federal air ambient quality standards allowable particulate matter of 24-hour concentration of 150 ug/m³. This was based on "Investigations of Fugitive Dust - Sources, Emissions and Control" prepared for the U.S. Environmental Protection Agency by PEDCO - Environmental Specialists, Inc. and the computer dispersion model "HIWAY."

The PEDCO study determined particulate emission factors for vehicles moving on unpaved roads and at different speeds. Ambient air quality data was gathered and a relation developed between vehicle speed and dust emissions that follow the equation:

$$(1) \quad E = (0.16) (1.068)^X$$

E = dust emissions in lbs/veh. mile
X = vehicle speed in miles per hour

Use of equation 1, with speeds of 15 mph and 40 mph yield 0.43 lbs. per vehicle mile, and 3.75 lbs. respectively. These figures, however, should be corrected because the ambient air quality sampling device, used to obtain the relationship, measured only a narrow range of particulate particle size.

When corrected to the high volume sampler, the equation become:

$$(2) \quad E = (0.27) (1.068)^x$$

The emissions for 15 mph and 40 mph became 0.72 lbs/veh. mile and 3.75 lbs/vehicle mile, respectively.

The draft environmental impact statement, published by BLM, assumes that only about 1000 entrants (one-third of those entered) will be left in the race after the third pit stop at the stateline. Using the 1000 entrants and a distance of 36 miles for the race within Nevada the predicted amount of airborne particulate (dust) would be generated, 13 tons at an average speed of 15 mph and 67 tons at a speed of 40 mph.

Bureau staff also used the "HIWAY" computer model to calculate ambient air particulate concentrations where the general public could have access. Assuming the emission factors determined in the PEDCO study for 15 mph and 40 mph, correcting them using the relationship between equations (1) and (2), the predicted 24-hour ambient air concentrations at 15 mph and 40 mph are:

$$\begin{aligned} 15 \text{ mph} &= 51 \text{ ug/m}^3 \\ 40 \text{ mph} &= 195 \text{ ug/m}^3 \end{aligned}$$

The state and national air ambient quality standards allowable, 24-hour concentration, is 150 ug/m^3 . Additionally, the background concentrations are determined by PEDCO for southern Nevada scrub of $25\text{--}30 \text{ ug/m}^3$ substantially assures that violations can occur. If vehicle speed is maintained, below 15 mph, the ambient air quality standard is not exceeded, but if the vehicle speed is 40 mph or greater the ambient air quality standard is exceeded by a factor of 1.3.

The 195 ug/m^3 concentration of particulates was calculated by Nevada for 1000 motorcycles. Therefore areas in California where concentrations of motorcycles are up to 3000 would likely exceed the 195 ug/m^3 figure. But even at this figure it is almost twice the allowable suspended particulate matter concentration of 100 ug/m^3 prescribed by the State of California. (See Table III-A-3 Air Quality Standards.)

In addition utilizing the total airborne formulae of the PEDCO study outlined above we calculate that assuming a 40 mile per hour motorcycle speed that 590 tons of particulate matter will be generated. (See Table II-A-4 Estimated Amount of Airborne Particulates Generated by the Race.)

The Air Pollution Control District also believes the race will violate Clark County standards on suspended particulate matter. Test on off-road vehicle races conducted by their office on similar sites to those near Jean Lake revealed particulate matter concentrations for a 24-hour average to range from 28 to 2400 ug/m^3 . This shows a fantastic variation. The reasons for this variation are not quantified but include variations in soil type, topography, and types of vehicles.

Table III-A-1

Estimated Impacts - Soil Associations

Impacted Area	Soil Assn.	Acres in Area of Influence	% & Acres Not Previously Impacted	Expected Additional Disturbance % & Acreage
Racecourse	Ac	590	^{1/} 40% - 240	^{3/} 20% - 50
"	Ad	1831	40% - 735	20% - 150
"	Cj	90	40% - 36	20% - 8
"	Gr	110	40% - 43	20% - 10
"	Ma	700	40% - 280	20% - 60
"	Rp	1944	40% - 775	20% - 155
Racecourse	Subtotal	5265	-----	433
Staging Area	Ma	810	^{2/} 10% - 81	20% - 16
Razor Stop	Ac	110	10% - 11	20% - 2
Valley Wells Stop	Ac	600	10% - 60	20% - 12
Stateline Stop	Rp	80	10% - 8	20% - 2
Finish Area	Ac	640	10% - 64	20% - 13
Totals	-	7505	-----	478

^{1/} The estimated degree of existing damage on the racecourse area of influence ranges from 20% through 100%. Therefore, for purposes of estimation, 40%, the mid-point in the range of undisturbed soil surface, was used.

^{2/} The estimated degree of existing damage on the staging, pit and camp areas ranged from 80% to 100%. Therefore, for purposes of estimation the mid-point in the range of undisturbed soil surface, 10% was used to estimate acres not previously disturbed.

^{3/} To estimate the expected additional disturbance, field estimations of additional impact ranged from 0-5% through 0-30% with the majority lying in the 0-20% range. Therefore, the top of that range is used.

Name of Course Segment	Wind Hazard North	Wind Hazard West	Surface Material	Wind Erosion Potential	Impact	Approx. Miles for Segment	% Distance of Course
Start to Afton Rd.	M	M	Sandy to Sa Loam	Moderate	Some dust on I-15 w/northerly wind	12	8%
W. Cronese	M	M-H	Sa Loam-Clay Loam	Mod-High		7	4%
E. Cronese	M-H	M	Sa Loam-Clay Loam	High	Increased dust & sand on I-15	3	2%
Mojave R.	M	M-H	Sandy-Sa Loam	High	Small increase in Blow-sand on U.P.	5	3%
Crucero to Soda Spring	L	L	Rocky-Gra Loam	Low		11	7%
Soda Lake	H	M	Si Loam	High	Small increase in dust to south	5	3%
Soda Lake to I-15	M-H	M	Sa-Gra Loam	Mod-Low		10	6%
I-15 to Halloran Summit	L	L-M	Rocky Gra-Loam	Low	Some dust on I-15	9	6%
Shadow Valley	M-H	M	Sa-Si Loam	Moderate	Some dust on I-15 w/north winds	21	14%
Mountain Pass	L	L	Rocky-Gra-Loam	Low		18	11%
Ivanpah Basin	H	M-H	Sa-Si Loam	High	Dust & sand on I-15 at Stateline	20	13%
Jean Basin	M-H	M	Sa-Si Loam	Mod-High	Small	23	15%
Sloan	L-M	L	Sand Sa Loam	Mod-High	Some dust on I-15 w/north winds	10	6%
Finish Area	M-H	M	Sa Loam	Moderate	Dust on I-15 w/weat winds	3	2%

TABLE III-A-3
AIR QUALITY STANDARDS

<u>Pollutant</u>	<u>Averaging Time</u>	<u>Concentration</u>	
		<u>State</u>	<u>Federal</u>
Photochemical oxidants	1 hour	0.10 ppm	160 ug
Carbon Monoxide	12 hours	10 ppm	---
	1 hour	40 ppm	35 ppm
Nitrogen Dioxide	1 hour	0.25 ppm	---
	annual avg.	--	0.05 ppm
Sulphur Dioxide	24 hours	0.04 ppm	0.14 ppm
	1 hour	0.5 ppm	---
Suspended Particulate Matter	24 hours	100 ug/m ³	260 ug/m ³
Hydrogen Sulfide	1 hour	0.3 ppm	---
Visibility Reducing Particles	1 observation	Sufficient amount-- to reduce prevailing visibility to 10 miles when relative humidity is less than 70%.	

TABLE III-A-4

ESTIMATED AMOUNT OF AIRBORNE PARTICULATES GENERATED BY THE RACE

Distance	Average No. of Motorcycles Per	Tons Particulates (3.75 lbs) (a) (b)
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TABLE III-A-4

ESTIMATED AMOUNT OF AIRBORNE PARTICULATES GENERATED BY THE RACE

Course Segment	Distance Miles (a)	Average No. of Motorcycles Per Segment (b)	Tons Particulates (3.75 lbs) (a) (b) 200 lbs.
Start to Razor Road Pit Stop	39	3000	220
Razor Road Pit Stop to Valley Wells	48	2000	180
Valley Wells to Stateline	32	1700	102
Stateline to Finish	36	1300	88
Total			590 Tons

Clark County Air Pollution Control District also believes the airborne particulate matter generated by the spectators would be greater than that of the racers. The racers' arrival will be staggered.

The Desert Protective Council predicts that the fallout of airborne particulate matter may have an immediate and long term damaging effect on plants and wildlife. While some damage is possible, the magnitude, to our knowledge, has not been studied or calculated.

5. Paleontology

The proposed course will not directly impact any known vertebrate paleontological localities. Without mitigation there is a slight possibility that uncontrolled actions of a few spectators or persons attracted to the area by the proposed race could conceivably cause impact to the Alvord Mountains and/or the Valley Wells localities. The Yermo Hills localities are two miles on the opposite side of the Interstate as the staging area.

6. Noise

a. Race Course

The noise level generated by the motorcycles as they collectively traverse the racecourse will briefly but intensely disturb the solitude of the natural environment through which they pass. At any point along the racecourse the noise will increase from almost total silence to loud noise levels, then decrease to almost total silence with solitude again restored except immediately adjacent to freeways. Where the racecourse crosses Interstate 15, motorists may be disturbed, startled, or intrigued.

The noise level generated by a single motorcycle is approximately 10,000,000 times greater than that experienced by a person in a quiet suburban residential area (see Table II-A-4).

b. Start Area

The existing resource of solitude within the start area will be impacted for several hours during preparation for the race with moderate to loud noise levels as well as intermittent spurts of extra loud noise. In relative terms, the magnitude of these noise levels is between 1,000 to 10,000,000 times greater than that experienced by a person in a quiet suburban residential neighborhood. When the race begins, noise levels will reach extra loud proportions for a short time then abruptly subside to moderate noise levels.

c. Pit Areas

The existing resource of solitude at the designated pit areas will be impacted with loud noise levels intermittently for the duration of the race.

d. Spectator and Camping Areas

The majority of spectators and campers will tend to congregate at the start area.

This congregation of people and motorized equipment will produce the most continuous and, at times, the most intense impact on the resource of solitude in comparison with the other four areas discussed.

e. Finish Area

The impact of noise on the existing solitude of the finish area is estimated to be quite similar to that of the pit areas; intermittent loud noise for several hours duration. In addition, the gathering of spectators and motorized equipment has been considered in this estimate.

B. Living Components

1. General Comments on Impacts

Diversity of Wildlife Species and Wildlife Habitats.

There are many different kinds of plant and animal communities found along the Barstow-Vegas racecourse. Fourteen different wildlife habitats or plant communities were identified. These vary considerably in flora, soil type, and composition of animal species.

The 14 habitats support at least 195 vertebrate species, of which 2 are amphibians, 36 reptiles, 101 birds, and 56 mammals. Different habitats vary in abundance and diversity of species. For example, the Crucifixion Thorn community has the fewest number of species (36) and Pinyon-Juniper Woodland the greatest (134). Some species are common and widespread and occur in many habitats, whereas others are highly restricted in distribution. See Section II-B for a description of each habitat type and the species found therein. Tables II-B-1 through 7 identify species by habitat.

Rare plants occur in all habitats traversed by the racecourse. These plants have been placed in 3 categories - rare, locally rare, and expected rare. Approximately 42 rare and locally rare species are known to occur on or in the vicinity of the course and another 36 may be expected to be in the area (see Appendix II-B-3).

Little detailed information is available on the distribution, abundance, and locations of rare wildflowers along the Barstow-Vegas racecourse. cursory surveys in August 1974 produced a few species of perennials. Therefore, comments on potential impact are estimates except where noted otherwise.

Factors Related to Intensity of Impact on Vegetation and Wildlife. Impacts on wildlife and wildlife habitats will vary considerably from place to place and will depend on such factors as: type of flora, type of fauna, soil composition, and topography. Impacts also depend upon whether the course covers existing dirt roads, old trails, new trails, washes, gullies, open country, or rocky slopes.

The Barstow-Vegas races have covered portions of the proposed course as many as 7 times and as few as 1 or 2. In the past, there have been 3,000 entrants, 10,000 to 12,000 spectators at the start, and several thousand at each pit stop and at the finish. Some areas, especially the Creosote Bush Communities, already show considerable disturbance, whereas others have had little impact. Table III-B-1, Impacts on Wildlife Habitat, summarizes: the number of miles and the acreages of road, trail, and wash for each habitat type; the soil types and their susceptibility to compaction; and potential impact on rare wildflowers. In addition, estimates are made on the extent of habitats damaged by previous races and the estimated additional damage that will be incurred by the proposed race.

LEGEND FOR TABLE III-B-1

IMPACTS ON WILDLIFE HABITAT

Note: The following definitions and criteria are important for use of the table.

Soil Associations: Relative Compactability. The terms low, moderate, and high are relative and refer to the potential of the soil for compaction. Soil compaction potential is an important factor to consider in estimating impact on habitat and ability of habitat to recover from off-road vehicle use. Soils with low potential for compaction will have more rapid recovery of vegetation and animal populations than those with high potential for compaction. Estimates for revegetation range from 1 to 10 years for low compactability to 5 to never for high compactability.

Total Acreage. Total acreage was determined by estimating the width of the previously used roads and trails, and placing the route dimensions on a 1 inch per mile topographic map. The start, finish, gas stop areas, and wide trail segment acreages were estimated with a standard 10 acre/dot grid. Narrow course segments, those of 8- to 200-foot widths, were computed by multiplying length times width in feet and dividing by square feet per acre. In pit areas and on roads, there is little habitat remaining. On trails and in washes, there may be a significant amount remaining.

Existing Conditions: Percent Habitat Lost From Previous Races. The percent habitat loss refers to vegetation and soil losses. If 50 percent of the habitat is lost, then 50 percent of the vegetation has been destroyed. Estimates for pits and roads are relatively precise, whereas those for trails and washes are less precise. All estimates are based on the best available information.

Estimated Loss of Remaining Habitat In and Around Pits, Roads, Trails, and Washes. These figures are based on the estimated additional loss that will occur to the remaining habitat. On roads and in pit areas, most of the habitat loss has already occurred. Some pit areas have been totally denuded of vegetation; additional damage to habitat will occur through further disturbance of soil and removal of remaining shrubs. On trails and in washes, loss of vegetation varies. Estimated additional losses are based on further crushing and damaging of shrubs and widening of trails, within the established total acreage given in the table under existing situation.

TABLE III-B-1 IMPACTS ON WILDLIFE HABITAT PLANT COMMUNITIES AND SOIL ASSOCIATIONS

WILDLIFE HABITAT TYPE OR PLANT COMMUNITY	MILES	ACRES	SOIL ASSN	RELATIVE COMPACT- ABILITY	PIT, ROAD, TRAIL, OR WASH	# OF MILES OF COURSE	EXISTING SIT- UATION: AREA OF INFLUENCE, TOTAL ACRES AFFECTED	EXISTING SIT- UATION: % OF TOTAL ACRES DAMAGED	ESTIMATED LOSS OF REMAINING HABITAT IN PITS, TRAILS, WASHES	EXISTING SITUATION ACRES OF SEVERELY DAMAGED HABITAT	EST. ADD'L LOSS OF HABITAT IN ACRES	RARE WILDFLOWERS PRESENT IN PLANT COMMUNITY WILDLIFE HABITAT	ESTIMATED IMPACT ON RARE WILDFLOWERS
ALKALI SINK- LAKE EDGE	pft 4.2	80 9.2	Rp Rp	H (wet) M (dry) "	pft road trail wash	1.3 1.6 1.1 4.2	80.0 9.2	pft - 80-100% road - 100% trail & wash - 50%	0 30%	80 4.5	0 2	4 locally rare species 3 expected rare species	med +
ALKALI SINK WITH MESQUITE	.2 3.0	4.0 635.0	Ac Rp	Mod. H (wet) M (dry)	road trail	0.7 2.50	639.0	road - 100% trail - 35%	0 up to 15%	0 224	0 62	4 locally rare species 3 expected rare species	low
WASH: DESERT WILLOW	.5 8.75	6.0 112.2	Rp Ac	H (wet) M (dry) mod.	road wash	.5 8.75	118.2	road - 100% wash - 35%	0 up to 10%	0 41	0 8	1 locally rare species 2 expected rare species	low
WASH: ACACIA AND BLACK-BANDED RABBIT-BRUSH	5.3	18.0	Ac	mod.	wash	5.30	18.0	25%	0-10%	5	1.5	1 rare species 5 locally rare species 1 expected rare species	low
WASH: DESERT ALMOND	3.5 1.2	6.0 1.8	Ad Ac	mod. mod.	road wash	.5 4.2	7.8	road - 100% wash - 25%	20% +	2	1	5 rare species 14 locally rare species 3 expected rare species	very high
WASH: CHEESE BUSH (LOW)	3.0 3.35 .5	25.0 13.0 9.0	Gr Ac Ad	low Mod. Mod.	trail & wash	6.85	47.0	25-30%	20% +	12	7	1 locally rare species 2 expected rare species	med-high
WASH: CHEESE BUSH (HIGH)	2.75	3.3	Gr	low	road wash	.5 2.25	3.3	road - 100% wash - 20%	20% +	1	.5	2 rare species 5 locally rare species 2 expected rare species	high

WILDLIFE HABITAT TYPE OR PLANT COMMUNITY	MILES	ACRES	SOIL COMPACT-ASSN ABILITY	PIT, ROAD, TRAIL OR WASH	# OF MILES ALONG COURSE	EXISTING SIT- UATION: AREA OF INFLUENCE, TOTAL ACREAGE AFFECTED	EXISTING SIT- UATION: % OF TOTAL ACRES CURRENTLY DAMAGED	ESTIMATED LOSS OF REMAINING HABITAT IN PITS, TRAILS, WASHES	EXISTING SITUATION ACRES OF SEVERELY DAMAGED HABITAT	EST. LOSS OF HABITAT IN ACRES	RARE WILDFLOWERS PRESENT IN WILDLIFE HABITAT	ESTIMATED IMPACT ON RARE WILDFLOWERS
CREOSOTE BUSH COMMUNITIES	6.75 8.9 1.95 .9 3.65 45.8 pit pit	39.6 187.1 90.0 600.0 700.0 412.4 810 110	Gr mod. Ad low Cj Hi-mod. Rp high Ma high Ac mod. Ma high Ac mod.	road trail trail trail trail rd-trl&wash pit pit	68	920 20 3583 20	pit-80-100% road-100% trail-50-60% wash-30-50%	up to 20% up to 20% up to 20%	828 0 1993 6	18 326 3	3 rare species 6 locally rare species 13 expected rare species	low
JOSHUA TREE/MOJAVE YUCCA-CREOSOTE COMMUNITIES	pit 7.5 5.8	1233.8 16.7 15.0	Ac mod Ac mod Gr low	pit road wash & trl road & trl	13.3	1233.0 7.0 38.7	pit-80-100% road-100% trail-50-60% wash 30-50%	up to 20% 0 up to 20%	1116 0 16	25 0 4	3 rare species 9 locally rare species 9 expected rare species	low
JOSHUA TREE-MOJAVE YUCCA-CACTUS COMMUNITY	4.0 1.5 11.2	9.0 3.0 15.7	Ac mod Ad mod Gr low	road trail road & trl	16.7	20 7.7	road-80-100% trail-30-50%	0 to 10%	2 3	- .5	4 rare species 8 locally rare species 9 expected rare species	low-med
BLACKBRUSH COMMUNITY	5.5	14.3	Gr low	road	5.5	14.30	95%	0-5%	14	--	7 rare species 23 locally rare species 17 expected rare species	low
PINYON JUNIPER WOODLAND	1.5 1.5	3.0 2.5	Gr low Ad mod	trail trail	3.0	5.5	50%	0-20%	3	.6	7 Rare species 23 locally rare species 17 expected rare species	high
PACHALKA SPRINGS				--	--	--	--	0-5%	--	--	7 rare species 23 locally rare species 17 expected rare species	low
CRUCIFIXION THORN	.25	1.0	Rp H (wet) M (dry)	trail	.25	1	--	0-5%	--	.1	4 locally rare species 3 expected rare species	low
PLAYA BOTTOM	13.4	692.0	Rp H (wet) M (dry)	trail	13.4	692.0	50	0-5%	346	17	--	--
TOTALS	155	7504.8				7504.7	III 15	--	4696.5	476.2	--	--

TABLE III-B-2

WILDLIFE HABITAT
TYPE OR
PLANT COMMUNITY

SIGNIFICANT WILDLIFE SPECIES RECEIVING MODERATE TO HIGH IMPACTS

	# SPECIES	# SIGNIFICANT SPECIES	SIGNIFICANT REPTILES AND AMPHIBIANS	SIGNIFICANT BIRDS	SIGNIFICANT MAMMALS
ALKALI SINK-LAKE EDGE	40	10	desert horned lizard, kingsnake, desert night snake, black-headed snake	None	Chisel toothed Kangaroo rat
ALKALI SINK WITH MESQUITE	72	27	desert iguana, desert horned lizard, Mojave-fringed toed lizard, leopard lizard, desert night snake	Gambel quail, verdin, mourning dove, black-tailed gnatcatcher	
WASH: DESERT WILLOW	63	24	banded gecko, desert iguana, Mojave- fringed-toed lizard, leopard lizard, desert horned lizard, kingsnake	Mourning dove, verdin black- tailed gnatcatcher	--
WASH: ACACIA AND BLACK-BANDED RABBITBRUSH	58	21	, red-spotted toad, banded gecko, leopard lizard, desert horned lizard, kingsnake	gambel quail, mourning dove, burrowing owl	--
WASH: DESERT ALMOND	84	32	banded gecko, leopard lizard, desert- horned lizard, kingsnake, Gila Monster, Rosy boa, lyresnake.	Gambel quail, mourning dove, Cassin Kingbird (pot.), blue- gray gnatcatcher, black-tailed gnatcatcher, prairie falcon	Nelson Bighorn Sheep, mule deer, chisel toothed kangaroo rat, mountain lion
WASH: CHEESE BUSH (low)	56	14	desert tortoise, banded gecko desert iguana, leopard lizard, desert horned lizard, kingsnake		
WASH: CHEESE BUSH (high)	83	25	banded gecko, rosy boa, leopard lizard, desert horned lizard, kingsnake, ring- neck snake, gila monster	gambel quail, mourning dove	Nelson bighorn sheep
CREOSOTE BUSH COMMUNITIES	70	40	banded gecko, desert iguana, desert tortoise, leopard lizard, desert horned lizard, kingsnake, Mojave fringe-toed lizard, black-headed snake, lyresnake	chukar, burrowing owl	--
JOSHUA TREE/MOJAVE YUCCA CREOSOTE COMMUNITIES	85	24	desert tortoise, banded gecko, leopard lizard, desert horned lizard, kingsnake desert night snake	Bendire thrasher, burrowing owl	
JOSHUA TREE - MOJAVE YUCCA CACTUS COMMUNITY	104	38	desert tortoise, banded gecko, leopard lizard, desert horned lizard, rosy boa, kingsnake, gila monster, speckled rattlesnake, lyresnake	most sensitive: Bendire thrasher, Mearns's gilded flicker, cassin kingbird, saguaro screech owl	Nelson bighorn
BLACKBRUSH COMMUNITY	89	35	banded gecko, leopard lizard, desert horned lizard, kingsnake, ringneck snake, night snake	gambel quail, mourning dove, crissal thrasher, blue-gray gnatcatcher	mule deer, Nelson bighorn
PINYON-JUNIPER WOODLAND	133	52	banded gecko, desert horned lizard, kingsnake, ringneck snake	Many of the hawks and falcons, gambel quail, mourning dove, Wright flycatcher, Virginia warbler, blue-gray gnatcatcher	mule deer, Nelson bighorn sheep, Pana- mint chipmunk, rock squirrel
PACHALKA SPRINGS	98	36	Gilbert's skink, ringneck snake, speckled rattlesnake, desert night snake	Wright flycatcher, gambel quail, bell vireo, gray vireo	Nelson bighorn, ring- tail cat, mountain lion
CRUCIFIXION THORN	38	14			
LAKE BOTTOM	unknown		There are several species of fairy shrimp, some of which are rare, that may receive moderate to high impacts		

LEGEND: MODERATE TO HIGH IMPACTS: Almost all of the 195 wildlife species will be affected by the Barstow-Vegas race and race-related events. Impacts take the form of stress to individuals, habitat loss, population loss, and disturbance of populations. Some significant species will receive moderate to high impacts. Moderate to high impacts on significant species include:

- Losses to and long term damage to wildlife habitat.
- Significant losses to populations.
- Disturbances that can cause animals (i.e., bighorn sheep) to abandon habitat for an extended period of time.

2. Impacts on Vegetation

There have been several recent studies on the effects of motorcycle races and of off-road vehicle use on vegetation in the Mojave Desert (Davidson, 1973; Keefe et al., 1973; Gibson, 1973; Davidson and Fox, in press). The studies not only discuss general effects, but quantify impact and damage, i.e., number and kinds of shrubs and annuals damaged or destroyed in pits, camping and start areas, and along race-courses.

In general, the field studies show that off-road vehicle use:

- a. reduces the number of shrubs
- b. reduces the diversity of shrub species by selectively impacting the smaller, more fragile species
- c. reduces the numbers of annual wildflowers that will germinate and flower in following years
- d. reduces the diversity of annual wildflowers
- e. favors growth of some exotic weeds

The extent of reduction in numbers and diversity of shrubs and annuals is related to the number of motorcycles in the race and on whether the impacted site is part of the course or is in a pit area (camping and gas stop site). There are three generalizations that can be made here: impacts increase as numbers of motorcycles and other vehicles increase; repeated use intensifies the damage; repeated use lengthens the period of recovery.

Effects of Soil Compaction on Revegetation. Soil compaction plays an important role in determining the short-term and long-term effects on vegetation. Compaction of soil reduces the pore spaces between soil particles and can occur to depths of several inches. When soils are compacted, there is decreased moisture available for plant growth, increased surface runoff, and decreased germination. There is much less chance of vegetation becoming reestablished. The greater the degree of compaction, the longer the period required for habitat recovery.

Table III-B-1 lists the potential for soil compaction in each habitat type. Soil types are rated in potential for compaction as low, medium, and high. The terms low, medium, and high are relative and are defined in the legend for the Table. Most of the acreage for the racecourse and pits is composed of soils with medium and high potential for compaction (2,770 and 3,533 acres, respectively, out of a total of 7,500 acres).

Recovery of Vegetation. In disturbed areas, natural revegetation occurs at slow rate. Initial establishment is by exotic (introduced, nonnative) weedy species such as filaree (Erodium cicutarium),

checker fiddleneck (Amsinckia intermedia), two species of Schismus (Schismus arabicus, S. barbatus), jimson weed (Datura meteloides), annual burweed (Franseria acanthicarpa), and Russian thistle (Salsola kali), and by plants of a lower successional stage, such as buckwheat (Eriogonum sp.), desert straw (Stephanomeria Pauciflora), snakeweed (Gutierrezia sp.), and allscale (Atriplex polycarpa).

Annuals usually appear first, followed by gradual invasion of shrubs. Many successional stages may be required to achieve the original climax community. Estimates for time for return of annual cover vary from 6 months to 10 years to perhaps never; estimates for recovery of the original climax community vary from 1 to 10 years, decades, to perhaps never. There are many variables to be considered, and for habitats on the Barstow-Vegas racecourse, one can safely state that some will revegetate and recover rapidly (wash types), whereas others may never recover, especially if ever used again.

3. Impacts on Wildlife

General effects of motorcycle and related off-road vehicle use on wildlife can be categorized by losses to wildlife habitat, losses to animal populations, and noise. Specific effects to significant species are discussed separately.

Losses to Wildlife Habitat. Losses to wildlife habitat occur with disturbance and damage to the physical environment (i.e., soils) and to the vegetation. Vegetation is used by animals as a direct and indirect source of food, for cover, for protection from predators, for nest and burrow sites, for territorial boundaries, and for other aspects of existence.

Damage to and loss of vegetation has a particularly important effect on animal-plant food chains and webs and the transfer and flow of energy in a community. Reduction of vegetation sets off a series of related events which are complex but predictable, because plants form the basis of all food chains and webs. There is:

- a. reduction in plants and plant nutrients available for transfer to consumer species
- b. reduction in herbivores (includes herivorous insects, reptiles, birds, and mammals)
- c. reduction in insectivores (includes insectivorous insects, reptiles, birds, and mammals)
- d. reduction in carnivores dependent upon insectivores, herbivores, and other carnivores
- e. decrease in stability of communities through loss of populations and loss of species

Both annual and perennial vegetation are important for cover from the extremes of temperature and from the wind. Shrubs also provide protection from predators; many lizards, snakes, and rabbits seek cover of shrubs when pursued or when a predator is in the vicinity.

Bushes are frequently the sites for burrows for lizards, snakes, and small mammals. The branches, litter, and foilage shade the openings of burrows and provide cover and camouflage for an animal emerging from or entering its den. Shrubs also influence, by shading, the temperatures experienced inside the burrows.

Birds, in particular, use shrubs and trees for perch sites, territorial boundaries, for feeding, cover, and nesting. Nests are placed on the ground at the edge of bushes by such ground nesting birds as the poorwill, lesser nighthawk, horned lark, and mourning dove. The black-throated sparrow, Brewer's sparrow, and sage sparrow build nests at the base of shrubs or close to the ground within the branches. Still other birds build nests in trees (pinyon pine, Joshua tree, catclaw, desert willow, tamarisk). A few of these are Scott's oriole, ladderback woodpecker, cactus wren, and ash-throated flycatcher. Nest sites most heavily impacted are those of ground-nesting or shrub-nesting species. The large trees are not as vulnerable to damage by off-road vehicles.

Generally, damage to shrubs can affect animal populations by:

- a. reducing cover used for protection from extremes of weather
- b. reducing cover used as protection from predators
- c. reducing sites for placement of burrows and nests

Losses to Animal Populations. Off-road vehicle use, in most cases, causes loss to animal populations--a decrease in both the numbers and diversity of species. The effects of ORV's on animals are direct and indirect. Indirect effects that cause population losses are loss of habitat (loss of food, cover, nests, burrows, etc.). Loss of habitat, in turn, reduces the carrying capacity of the community for the animals. In this case, mortality does not necessarily occur immediately. Mortality is increased in the long term without a corresponding increase in natality because:

- a. animals are eaten by predators when they cannot find burrows or cover
- b. animals die of exposure because burrows and homesites are no longer available
- c. food sources have been destroyed
- d. there are no nest sites, or fewer nest sites are available.

Direct mortality to some animals will occur at the time of the race. In late fall (November-December), many desert reptiles and mammals hibernate. Others are nocturnal and spend daylight hours underground. In particular, there are 9 species of lizards, 17 of snakes, the desert tortoise, and 19 species of small mammals that live underground the greater part of the year. Some, especially the reptiles, lie a few inches beneath the soil surface. Others are in burrows from 2 inches to 3 feet below the surface. Some will be crushed during the race. Susceptible reptiles are banded gecko, desert iguana, zebra-tailed lizard, Mojave fringe-toed lizard, leopard lizard, side-blotched lizard, desert horned lizard, western whiptail, gila monster, desert tortoise, western blind snake, spotted leaf-nosed snake, rosy boa, red racer, striped whip-snake, Mojave patch-nosed snake, gopher snake, glossy snake, kingsnake, long-nosed snake, western ground snake, shovel-nosed snake, black-headed snake, desert night snake, sidewinder, and Mojave rattlesnake. The mammals are: Crawford's desert shrew, antelope ground squirrel, round-tailed ground squirrel, pocket gopher, little pocket mouse, Great Basin pocket mouse, long-tailed pocket mouse, desert pocket mouse, chisel-toothed kangaroo rat, Merriam's kangaroo rat, desert kangaroo rat, Panamint kangaroo rat, canyon mouse, cactus mouse, deer mouse, brush mouse, pinyon mouse, grasshopper mouse, and desert woodrat.

Several of these are considered significant species. The desert tortoise and gila monster are fully protected; the desert iguana, banded gecko, leopard lizard, Mojave fringe-toed lizard, desert horned lizard, and rosy boa are partially protected by State Fish and Game Codes because populations are diminishing. The chisel-toothed kangaroo rat is a significant mammal because it has restricted habitat and is uncommon.

In some instances, reduction of perennial vegetation and soil disturbance can appear to benefit a few wildlife species. These species, however, are generally widespread in the western United States and occur in many habitats. They can live in the open areas with little cover. Some species which might temporarily increase in numbers are: side-blotched lizard, zebra-tailed lizard, deer mouse, Merriam kangaroo rat, and horned lark.

However, it should be emphasized that while there may be an increase in numbers for a few species, the total numbers of the animals and the total biomass in the community will still be less in disturbed than in undisturbed areas. Thus, productivity is less.

Noise. The effects of noise and disturbance on animals are difficult to measure and to quantify. Disturbance will cause many species to leave the racecourse and associated use areas. When an animal leaves its home range and territory, it has two choices. It can move into unsuitable habitat or it can enter the territory of another member of the same species. Both choices cause stress to the animal because of competition for food, space, and cover. Stress may be significant for some species because race and race-related activities will last several hours.

Noise has been studied in some laboratory animals. Mammals are able to detect ultrasonic frequency and are susceptible to hearing loss from extended periods of noise. Miller, et al., (1963) exposed rats to 115 dB for 8 hours, and the result was a permanent loss of hearing sensitivity. Gibson (1973) measured noise levels of motorcycles during a desert race and found a range of 83 to 116 dB for individual motorcycles. With the noise levels of greater than 115 dB and race duration of 8 hours or more, hearing loss can be expected to occur in some mammals along the racecourse.

Permanent loss of hearing sensitivity can make an animal less able to detect danger and distress signals, and thus more vulnerable to mortality from predation.

Additional mortality can occur during the race when danger signals and distress signals are masked by the noise of motorcycles.

Studies on the General Effects of ORV's on Animals. The studies of Busack (1973) and Byrne (1973) on effects of ORV's on several species of reptiles and mammals in the Mojave Desert are applicable here. Their studies cover effects from habitat loss, losses of animals, and possible influence from noise. The habitats, animals species, and vegetation types in the study sites are similar to those on the Barstow-Vegas course. Study sites included heavy use areas (pits, camping areas) with greater than 70 percent loss of vegetation, moderately used areas (trails with less than 50 percent vegetative loss), and relatively undisturbed habitat.

Populations of 4 species of lizards and 6 of small mammals were analyzed in the three types of study areas. In the moderate ORV use areas, numbers of animals were reduced to 40 to 54 percent of the normal figures. In heavy use areas, numbers were reduced to 8 percent. In addition, among the animals studied, the diversity of species decreased markedly. There was a decrease from 4 of the species of lizards and 6 of small mammals in undisturbed sites to 1 species of lizard (side-blotched lizard) and 1 mammal (deer mouse) in heavy use areas. Results of these studies, although limited in scope, are indicative of what happens in other populations in the communities. Losses occur not only in number of animals but in number of species. There is a direct relationship between loss of habitat and loss of numbers and diversity of animal species.

Recovery of Wildlife Populations. Wildlife species vary in potential for recovery from disturbance and disruption of populations. Short-lived animals with high reproductive potential and rapid maturation have greater capacity for recovery than long-lived species with low reproductive capabilities and a long period to reproductive maturity. Some examples of short-lived species are the side-blotched and zebra-tailed lizards, sidewinder rattlesnake, black-throated sparrow, sage sparrow, horned lark, and the many species of small rodents. Some long-lived species are the desert tortoise, chuckwalla, desert iguana, gila monster, raven, prairie falcon, and Nelson bighorn sheep.

Wildlife populations vary considerably in numbers. Some species are common and widespread; others are rare and have highly restricted habitat preferences. The widespread, common species are more likely to recover rapidly from disturbance to habitat or losses to populations than the rare and more specialized species. Species that are low in numbers, have low population densities, and have specialized needs may suffer extensively from slight inroads on their limited habitats and populations. Examples of these are the gila monster and Nelson bighorn sheep.

In general, most animal species will recover rapidly from population losses if the habitat is intact. However, if habitat is lost or damaged, recovery will occur only when the habitat is restored.

Wildlife habitat recovers gradually from off-road vehicle impacts. Estimates for recovery times of various habitats to natural or climax condition vary from 2 to over 100 years, and perhaps never. The time period is dependent upon habitat type, intensity of use, and cumulative effects of repeated use.

Cumulative Effects of ORV Use on Wildlife Habitat. Damage is incurred by one race or event on undisturbed land. Vegetation is damaged and lost, soils disturbed and compacted, and wildlife populations disturbed with losses to some animals. If the disturbed site is not reused, recovery will take place gradually. Crushed shrubs may resprout from root crowns and weedy annuals fill in as ground cover. Animal populations will return to prerace event levels as the habitat recovers. However, if the site is used again, damage increases. Shrubs resprouting from root crowns may be destroyed; there is additional compaction, erosion, and deflation of soils. Wildlife populations are again disturbed. Trails along the motorcycle course are widened and pit areas enlarged. The amount of acreage disturbed increases. Increased use, even on an intermittent basis, results in increased damage and disturbance. Potential for total recovery decreases and the time span for restoration increases. With repeated use, the soils and vegetation may be so severely damaged that recovery may never occur.

It should be noted here that use will occur on trails and in pits whether or not there is a formal event. Individuals, families, and groups will use portions of the trail on the course as well as pit areas. Cross-country travel to and from race segments will also have effects on surrounding habitat. Additional and continual impacts will occur. The cumulative effects will be significant, especially over a long period of time.

Specific Impacts on Wildlife Habitats

Alkali Sink-Lake Edge. About 90 acres of this type of habitat have been and will be affected by the race; 80 acres have been devoted to pit and 9 to roads, trails, and washes (Table III-B-1). There has been approximately 80 to 100 percent habitat loss in the pit areas and 50 percent on roads, trails, and washes. An additional 30 percent of what is left is likely to be lost with the proposed race. Potential for compaction is high when soils are moist (after recent rains), moderate when dry (Table III-B-1). Thus, time for recovery of vegetation is likely to be lengthy.

Significant species receiving moderate to high impacts are desert horned lizard, kingsnake, desert night snake, and the Utah black-headed snake. All of these are found throughout the desert in many habitats. Potentially, the most important species is the chisel-toothed kangaroo rat, which has limited habitat preferences (Table III-B-2).

Pit areas, where habitat losses to date approach 80 to 100 percent, support few species of animals. Populations are probably 5 to 20 percent of those in undisturbed habitat. On trails and washes, losses are less, perhaps 50 percent. In these areas wildlife populations will receive up to 30 percent additional damage from the proposed event.

Alkali Sink With Mesquite. There are 639 acres of this habitat affected, the majority of which is on trails. An estimated 35 percent of the trail habitat has been destroyed. Trail areas may lose an additional 15 percent of habitat. The compactability of soils ranges from moderate to high (when moist), and thus recovery of vegetation will be slow. (See Table III-B-1).

There are several significant species that will receive additional moderate to high impacts (Table III-B-2). Currently, with 35 percent of the habitat lost, wildlife populations can be expected to have declined about 30 to 40 percent, a similar amount. Remaining wildlife populations are likely to decline an additional 15 percent from the proposed action.

One of the more important species affected is the Mojave fringe-toed lizard. Alkali Sink with mesquite represents important habitat for the verdin and black-tailed gnatcatcher (feeding, nests, cover) and provides cover for the gambel quail, mourning dove, and cottontail rabbit.

Wash: Desert Willow. There are 118 acres affected, of which 6 are on roads. The remainder is in wash, where habitat losses to date are estimated at 35 percent. Washes are likely to receive an additional 15 percent loss of habitat with the proposed race. (See Table III-B-1).

There are several significant species that may receive moderate to high impacts (Table III-B-2). The most important is the Mojave fringe-toed lizard, which is limited in distribution to windblown sands of the Mojave Desert. With an estimated 35 percent of the habitat destroyed, populations of the Mojave fringe-toed lizard and other wild-life species have probably declined by at least one third.

Wash: Acacia and Black-banded Rabbitbrush. Only 18 acres are affected in this habitat. Off-road vehicle impacts have produced up to 25 percent habitat loss to date; the proposed event is likely to result in an additional 10 percent loss. Soils here have moderate potential for compaction (Table III-B-1).

Wildlife populations have lost about 25 percent of the habitat and may experience an additional 10 percent loss along the trail. With loss of habitat, there is a corresponding loss of population. There are several significant species that may receive moderate to high impacts (Table III-B-2). The wash offers excellent cover for such game birds as gambel quail and mourning dove, and for such predators as the kit fox, coyote, and badger.

Wash: Cheesebush Low Elevation. Low elevation cheesebush covers about 47 acres; an estimated 25 to 30 percent of this habitat has been lost. An additional loss of 20 percent is expected with the proposed event. Approximately 50 percent of the soils here have low potential for compaction and 50 percent have moderate potential. Recovery of soils and vegetation may be more rapid in areas with low potential for compaction than in other parts of the course.

Wildlife habitat and populations already have been reduced by an estimated 25 to 30 percent. The significant species with moderate to high potential for past and future impacts are all reptiles. One, the desert tortoise, is fully protected; the rest are partially protected by Fish and Game Codes (desert iguana, kingsnake, leopard lizard, desert horned lizard, and rosy boa).

Creosote Bush Communities. Creosote Bush Communities, which represent one of the most widespread vegetative types in the California Desert, have a total of 3,643 acres impacted by the Barstow-Vegas event. Of the total, 920 acres are in pits and have received as much as 80 to 100 percent habitat loss. The rest - roads, trails, and washes - has had 30 to 100 percent habitat loss in the past and may receive up to 20 percent additional loss from the proposed action. Soils vary in potential for compaction from low to high; therefore, time for recovery of habitat and revegetation will vary considerably (Table III-B-1).

Wildlife population and habitat losses vary from 80 to 100 percent in pits to 30 percent on some trails and washes. Again, most of the significant species which will receive additional heavy

impact are the reptiles. One, the desert tortoise, is fully protected by State Fish and Game Codes. Several others are partially protected by state laws: desert iguana, desert horned lizard, leopard lizard, banded gecko, kingsnake, and Mojave fringe-toed lizard. Two others are uncommon to rare: lyre snake and Utah black-headed snake. With the exception of the tortoise and Mojave fringe-toed lizard, all are fairly widespread in the desert.

Joshua Tree or Mojave Yucca and Creosote Communities. There are 1,278 acres affected in this habitat type. Of these, 1,240 are in pit areas and have received losses of 80 to 100 percent to the habitat. An additional 38.7 acres are on trails, washes, and roads and have received impacts causing an estimated 30 to 50 percent loss of habitat to date. There is likely to be an increased 20 percent habitat loss from the proposed race. Soils of this habitat are low to moderate in potential for compaction.

The overall impact to wildlife populations has been high. Over 1,000 acres of wildlife habitat have been lost, with corresponding losses to the resident species.

Joshua Tree or Mojave Yucca and Creosote Communities have many of the same reptiles as the Creosote Communities. The species with the greatest potential for population loss is the desert tortoise. Moderate to high densities of tortoises occur in this community. The potential for recovery of tortoise populations from the race and race-related activities is low. In addition to the reptiles, such birds as the bendire thrasher and burrowing owl may be affected. Numbers of these birds are low, and slight changes in the habitat may be disruptive.

The Clark Mountain Area. The Clark Mountain area has a number of different habitat types that occur on one segment of the race-course. These include the Desert Almond Wash, high elevation Cheesebush Washes, the Joshua Tree-Mojave Yucca-Cactus Community, Blackbrush Community, Pinyon-Juniper Woodland, and Pachalka Spring. Most of these habitats support large numbers of animal species, a diverse flora, and many rare wildflowers.

The lower and western slopes of Clark Mountain have a rich cactus garden, perhaps unequalled in the California Desert. The course borders the edge of the Clark Mountain "closed area" (closed to off-road vehicles to protect natural resources) for about 3 miles. The Clark Mountain closed area is predominantly Pinyon-Juniper Woodland type. In addition, there are the Pachalka Spring or Gardens, which lie a few hundred yards off the racecourse, but have the potential for receiving impacts from motorcyclists who stop to rest, must be picked up because of breakdown, and from spectators, etc.

The habitats affected total 58.6 acres on about 23 miles of course. A large portion, 13.5 miles, lies on existing roads, but another segment of 9.5 miles traverses washes and trails. Soils vary in compactability from low to moderate (see Table III-B-1).

The estimated 20 to 25 percent loss of habitat that has already occurred on the trails and washes (high elevation Cheesebush and Desert Almond Wash) is minimal compared to other parts of the course because the race has gone over this route only once or twice previously instead of seven times. An additional 20 percent habitat loss is to be expected from the proposed event.

Washes and trails in the Clark Mountain area have 11 rare, 26 locally rare wildflowers, and another 23 expected rare plants. Some are: Utah *Mortonia*, Heermann's buckwheat, lime penstemon, Stephen's penstemon, Aven Nelson's phacelia, Fendler ground cherry, Alverson's cactus, and many others. There are more rare plant species concentrated in this area than in most parts of the California Desert. Several were noted along the course in washes and could receive impact from the event.

The numbers of significant species of wildlife are also high. In the washes there is a gila monster, a very rare species in California and fully protected by Fish and Game Codes. It is found in restricted areas below 4500 feet in the Providence and Clark Mountains. Habitat in California is believed to be limited by areas with a minimum of a 2-inch summer rainfall. The minimum 2-inch summer rainfall in the desert occurs in a narrow band in the eastern Mojave Desert. In addition, the gila monster favors rocky washes, where it lives under rocks, under shrubs, and in burrows. It feeds on eggs of birds and on small mammals.

The gila monster is nowhere common, has restricted habitats in Nevada, Arizona, New Mexico, and Utah, and is fully protected by state laws because of its scarcity and diminishing numbers.

The proposed race routes may cover a significant portion of its limited habitat in California. There are about 8 miles of potentially prime habitat in washes that are traversed by the course. Without mitigation, further use of these washes for the race would substantially damage the habitat (an additional 20 percent).

There are other significant reptiles in the washes and on trails -- banded gecko, leopard lizard, desert horned lizard, kingsnake, rosy boa -- all partially protected by Fish and Game Codes. Species uncommon to rare are the lyre snake, desert night snake, Utah black-headed snake, and ringneck snake. The ringneck snake is another species highly restricted in distribution in the desert.

There are many significant species of birds, and it is difficult to determine which might receive moderate to high impacts from the event. Some are listed in Table III-B-2; all are listed in Table II-B-6. The habitat in the Pinyon-Juniper Woodland and Pachalka Spring supports an unusually diverse avifauna. In general, the birds already low in numbers and with limited habitats will be the more likely to suffer. Some are the Cassin kingbird, crissal thrasher, blue-gray gnatcatcher, Wright flycatcher, Virginia warbler, Bell's vireo, and gray vireo.

Several mammals also are likely to be affected. Of these, the Nelson bighorn is probably the most susceptible to habitat disturbance, noise, and race activity. The population numbers are low and habitat is limited.

Although the acreage involved in the Clark Mountain area is low, and over 50 percent of the course covers existing road, the potential for significant habitat damage and disturbance to wildlife is high. Cumulative effects from repeated use, either from organized off-road events or from casual use, will be significant, especially to those species, whether plant or animal, with limited numbers and geographic range.

Crucifixion Thorn. The playa with Crucifixion Thorn covers only a mile or less of course and .25 acre. The soils here are moderate in compaction potential if dry and high if moist. Impacts to this community would primarily occur to the playa surface itself, because the thorny trees would be avoided by most motorcyclists. Without mitigation, there is an estimated 0 to 5 percent potential for damage to the habitat.

Summary of Impacts. There are approximately 7,500 acres of desert with 14 different habitat types that have been impacted in the past and will receive additional damage from the proposed event. About 2,240 acres of habitat are used as pits and have received extensive and intensive habitat losses ranging from 80 to 100 percent (about 2,000 acres of habitat lost). The rest of the acreage occurs on roads, trails, and washes; habitat losses vary from 30 to 100 percent (about 2,675 acres). An additional loss of 476 acres is anticipated from the proposed event, about 16 percent of the remaining 2,800 acres of usable habitat. See Table III-B-1.

Potential for recovery from damage to soils, vegetation, and loss of animal populations varies considerably. Estimated time for recovery varies from 1 year to decades to centuries, if ever. Ability for the habitat to recover depends on the potential for soils for compaction, and the extent to which exotic plants become established in the area. Approximately 3,500 acres (about half of the impacted acreage) have high potential for compaction, 2,770 have moderate potential for compaction, and about 200 have low potential for compaction. Because

most of the soils affected are in the moderate to high categories, the time for recovery - if the areas are not used again - is estimated to be extensive.

Many species of reptiles, birds, and mammals will sustain losses to populations and losses to habitats from the event. There are 77 significant species that will be affected. Although some of these are widespread in the desert, populations have been diminishing. Additional losses to most from the event may not be significant to the population as a whole; however, the ultimate effect will be to further decrease habitats and populations.

Although not noted under the discussion of individual habitat types, significant mammals such as kit fox, bobcat, coyote, badger, weasel, and mountain lion will sustain some losses to their overall populations. With the decrease in food supply (due to losses of small prey animals such as rodents, lizards, and snakes), and the loss of habitat for the prey animals, there will be a corresponding decrease in the predators. These species are sensitive to the presence of man. If the race is run annually and the course is used at other times by casual riders, these species will leave the vicinity. Once an animal leaves its territory and enters that of another, its chances for survival are decreased.

There is only one species of animal, the gila monster, that is expected to sustain severe and perhaps serious disturbance to its habitat.

C. Human Interest Values

1. Aesthetics

A rating team of three Bureau of Land Management recreation planners flew the proposed racecourse to appraise its scenic value, degree of present ORV impact, and anticipated additional ORV impact. The results of this evaluation flight are summarized in the following "Aesthetic Impact Evaluations". Photographs illustrating the segments described in Section II accompany the evaluations.

A rating system of "high", "medium", and "low" has been employed to rate the following:

- (1) Degree of existing ORV impact
- (2) Expected additional ORV impact
- (3) Overall Scenic Quality

Factors considered in rating present and expected additional ORV impact include such visual landscape elements as scale, contrast, form, texture, color, and harmony. Consideration was given to the degree to which these elements, considered in total, were negatively impinged upon by the racecourse. Each of these elements played more or less importantly with varying terrain situations. For example, color and texture are fragile, visual aesthetic elements of desert pavement situations, while they are negligibly important on sand dunes.

Expected, additional ORV aesthetic impact is a measure of impact extension brought on by the proposed race with all its parameters, namely choice of route, nature of race, number of vehicles entered, race rules, and visual landscape elements.

Overall scenic quality was determined by the team of recreation planners through a consideration of such factors as landform, color, uniqueness, vegetation, manmade intrusions, etc. The Bureau of Land Management's "Quality Evaluation Chart", which served as a guide in this consideration, is appended to this report. The base against which areas were rated high, medium, or low scenic quality is the Mojave Desert. Solomon's Knob, for example, received an overall scenic quality rating of medium as compared with scenery in the Mojave Desert, not just the route of the proposed race.

2. Recreation

a. General

Conflicts between the race and other outdoor recreationists are both physical and attitudinal. These are described for each recreational activity below and summarized in Table III-C-3.

A summary of activities most likely to be impacted along specific race route segments will be found in Table III-C-4.

— HUMAN INTEREST VALUES —

AESTHETIC IMPACT EVALUATIONS: SEE INDEX SHEET D-1

1. RACE START
2. WEST CRONESE LAKE
3. EAST CRONESE LAKE
4. CRONESE VALLEY ROAD CROSSING
5. RASOR PIT STOP
6. SODA LAKE
7. KELBAKER ROAD CROSSING
8. HYTEN'S WELL/SOLOMON'S KNOB
9. VALLEY WELLS PIT STOP
10. CLARK MOUNTAIN NORTH ROUTE
11. CLARK MOUNTAIN SOUTH ROUTE
12. IVANPAH LAKE/STATELINE PIT STOP
13. ROACH LAKE
14. BEER BOTTLE PASS
15. JEAN LAKE
16. ERIE TO ARDEN
17. RACE FINISH

SPECIFIC RECREATION IMPACT SITUATIONS: SEE INDEX SHEET D-1

- A. SODA LAKE AND OLD FORT SODA
- B. TONOPAH AND TIDEWATER RAILROAD
- C. PACHALKA CACTUS GARDENS
- D. CLARK MOUNTAIN FIR FOREST

U.S.G.S. QUADRANGLES - 15' SERIES

1. - ALVORD MOUNTAIN, CA.
2. - CAVE MOUNTAIN, CA.
3. - SODA LAKE, CA.
4. - HALLORAN SPRING, CA.
5. - MESCAL RANGE, CA.
6. - CLARK MOUNTAIN, CA.
7. - ROACH LAKE, NEV.
8. - GOODSPRINGS, NEV.
9. - SLOAN, NEV.
10. - LAS VEGAS, NEV.

AESTHETIC IMPACT EVALUATIONS

SEGMENTS **1** THRU **17**

SPECIFIC RECREATION IMPACT

SITUATIONS

SEGMENTS **A** THRU **D**

(SEE NEXT SHEET FOR SEGMENT LISTING)

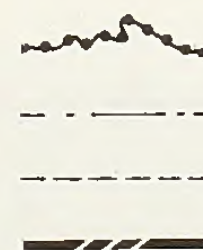
LEGEND

COURSE

TOWNSHIP AND RANGE LINES

RESERVATION BOUNDARY

15' QUADRANGLE MAP SERIES



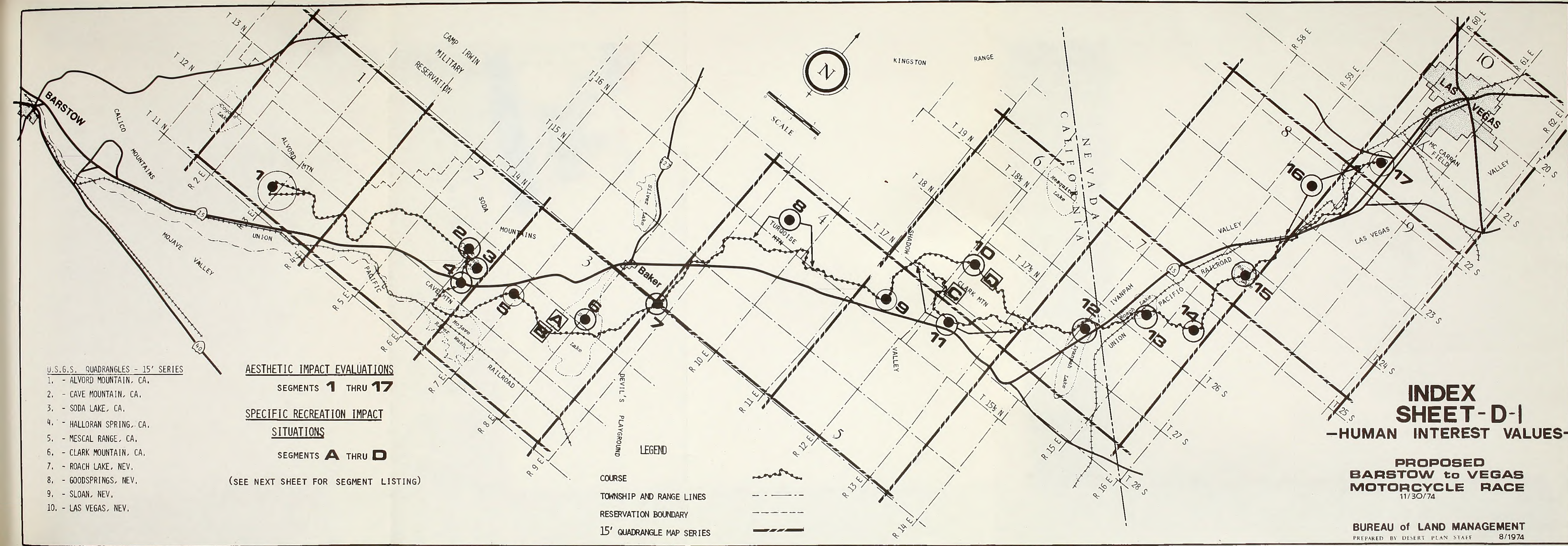
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**PROPOSED
BARSTOW to VEGAS
MOTORCYCLE RACE**

11/30/74

BUREAU of LAND MANAGEMENT

PREPARED BY DESERT PLAN STAFF 8/1974



Page 10

See also, 3 miles southeast of Alameda, California.

Topographic map, 1:250,000, showing the area.

Geological map, 1:250,000, showing the area.

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AESTHETIC IMPACT EVALUATION -- BARSTOW/LAS VEGAS MOTORCYCLE RACE

Segment: #1

Race start, 2 miles southeast of Alvord Mountain

Topographic Type: Flat, gently sloping towards the west

Vegetation Type: Creosote/Bursage

Avr. Width of Course: $\frac{1}{2}$ to 1 mile beyond start for first 3-4 miles

Degree of Existing ORV Impact: H H = High

Expected Additional ORV Impact: H M = Medium

Overall Scenic Quality: L L = Low

Remarks, Special Features, Etc.: Small hills add some topographic relief to otherwise flat gently sloping terrain. Interstate Highway 15 to the southeast and a powerline to the north impact the aesthetic quality of the area. Expected dust clouds could be visible from the highway some 4 miles distant. The smoke bomb on the hill near starting point would be visible from the highway and elsewhere. Because of the prerunning of the first few miles of the course by some 3,000 competitors, additional ORV impact is expected to be high. (See Photos No. 1-1, 1-2, 1-3).

Segment #1



Photo #1-1 Starting area of the Barstow to Las Vegas
Motorcycle Race

Segment #1



Photo # 1-2 Creosote/Bursage on westerly sloping hill
one mile beyond starting point of race

Segment #1



Photo #1-3 Race course narrowing to 300 feet on moderately undulating terrain 4 miles from start

AESTHETIC IMPACT EVALUATION -- BARSTOW/LAS VEGAS MOTORCYCLE RACE

Segment: #2

West Cronese Lake

Topographic Type: Playa surrounded by mountains

Vegetation Type: Alkali sink vegetation surrounding bare playa

Avr. Width of Course: 200'

Degree of Existing ORV Impact: M H = High

Expected Additional ORV Impact: L if dry or M if wet M = Medium

Overall Scenic Quality: H L = Low

Remarks, Special Features, Etc.: Mesquite hummocks west of West Cronese Lake add visual variety. Race contestants traversing a narrow pass in the Cronese Mountains have created an obvious scar on the landscape. Vertical peaks jutting from the flat valley floor create an impressive desert scene. (See Photo No. 2-1).

Segment #2

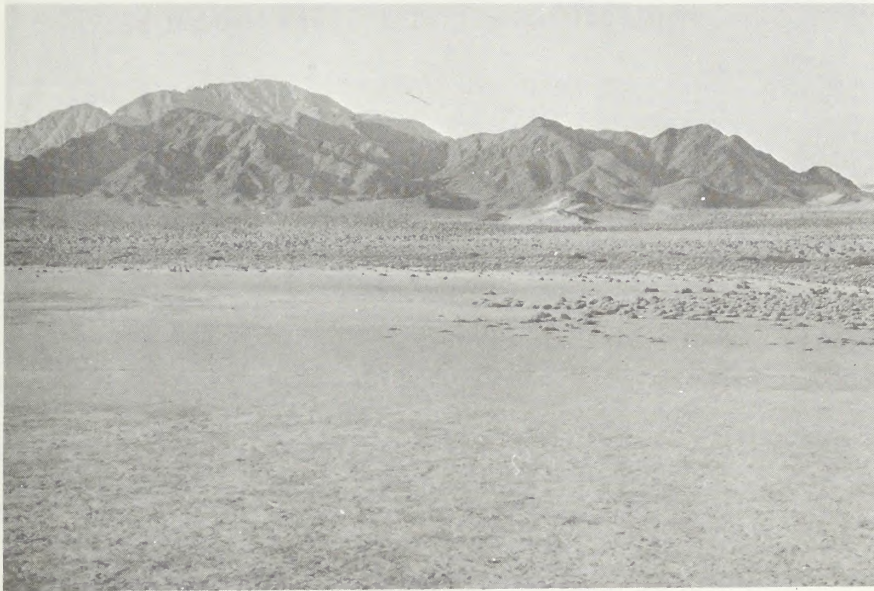


Photo #2-1 West Cronese Lake surrounded by sheer mountain peaks which rise abruptly from the expansive valley floor; alkali sink vegetation around periphery of playa.

AESTHETIC IMPACT EVALUATION -- BARSTOW/LAS VEGAS MOTORCYCLE RACE

Segment: #3

East Cronese Lake

Topographic Type: Playa

Vegetation Type: None on playa; alkali sink flora around playa

Avr. Width of Course: 100' or less

Degree of Existing ORV Impact: M H = High

Expected Additional ORV Impact: L if dry; M if wet M = Medium

Overall Scenic Quality: M L = Low

Remarks, Special Features, Etc.: Scenically similar to West Cronese Lake but playa basin is not as accentuated by proximity of steep mountains. This section of course is partially visible from Highway I-15. (See Photo No. 3-1).

Segment: #3



Photo # 3-1 Pass used by cyclists to cross from West Cronese to East Cronese Lakes

AESTHETIC IMPACT EVALUATION -- BARSTOW/LAS VEGAS MOTORCYCLE RACE

Segment: #4

Cronese Valley Crossing

Topographic Type: Mojave River Wash

Vegetation Type: Creosote Shrub

Avr. Width of Course: 100'

Degree of Existing ORV Impact: M H = High

Expected Additional ORV Impact: M M = Medium

Overall Scenic Quality: L L = Low

Remarks, Special Features, Etc.: Motorcycle crossing on I-15 at Cronese Valley may create a traffic distraction. Dust clouds created by motorcycle tires churning up unconsolidated soil particles may create a safety hazard for highway traffic while impairing the aesthetic qualities of the area as well. (See Photo No. 4-1).

Segment: #4

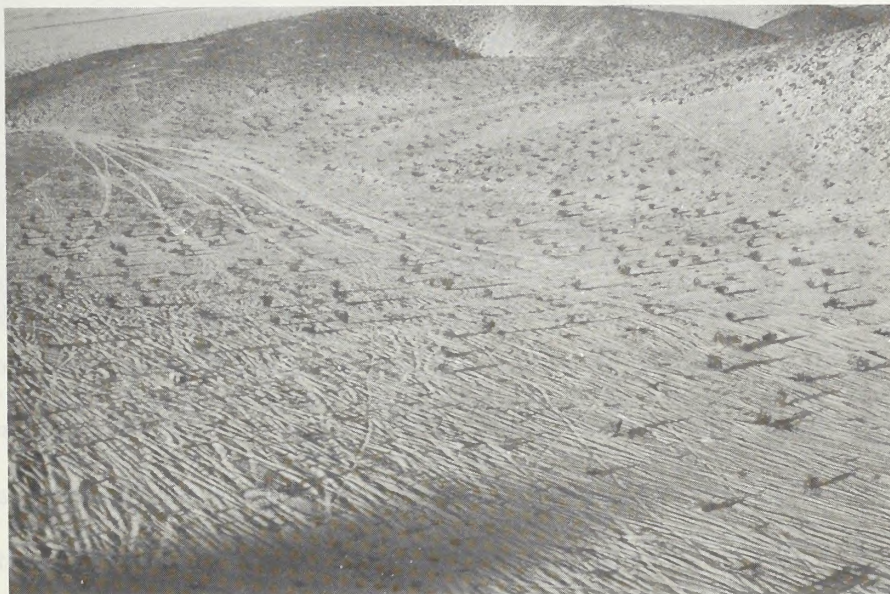


Photo # 4-1 Motorcycle course as it intersects the creosote-dotted northeast end of Cave Mountain, south of Cronese Valley.

AESTHETIC IMPACT EVALUATION -- BARSTOW/LAS VEGAS MOTORCYCLE RACE

Segment: #5

Razor Pit Stop and Six Mile Approach

Topographic Type: Narrow Canyons, Dunes, and Flats

Vegetation Type: Creosote shrub - mesquite hummocks

Avr. Width of Course: Varies 50' - 400'

Degree of Existing ORV Impact: H H = High

Expected Additional ORV Impact: M M = Medium

Overall Scenic Quality: L L = Low

Remarks, Special Features, Etc.: Sand dunes and mesquite hummocks offer a contrasting change to the creosote flatlands. Intrusions include powerlines, freeway, other roads, and mining scars. Additional damage is expected because of concentration of spectators and pit racing activities. Dust will be a very evident aesthetic impact on this vicinity. (See Photos No. 5-1 and 5-2).

Segment: #5



Photo # 5-1 Sand Dunes and Mesquite hummocks near Razor Pit Stop



Photo # 5-2 Motorcycle tracks in the sandy flats at Razor Pit Stop

AESTHETIC IMPACT EVALUATION -- BARSTOW/LAS VEGAS MOTORCYCLE RACE

Segment: #6

Soda Lake

Topographic Type: Desert Playa

Vegetation Type: Alkali sink plants

Avr. Width of Course: Up to 500' across playa, 10' through gate east
of playa

Degree of Existing ORV Impact: M H = High

Expected Additional ORV Impact: L if dry; M if wet M = Medium

Overall Scenic Quality: M L = Low

Remarks, Special Features, Etc.: Noteworthy surrounding features include: Soda Springs, Old Fort Soda, unique desert sink aquatic vegetation types, and the Tonopah and Tidewater Railroad grade. Old railroad grade and scientific values are threatened by motorcyclists who deviate from course. (See narrative under specific "Impacts Upon Especially Significant Recreation Areas," as well as Photos No. 6-1, 6-2, 6-3).

Segment: #6

Photo # 6-1

ORV tracks across
Soda Lake



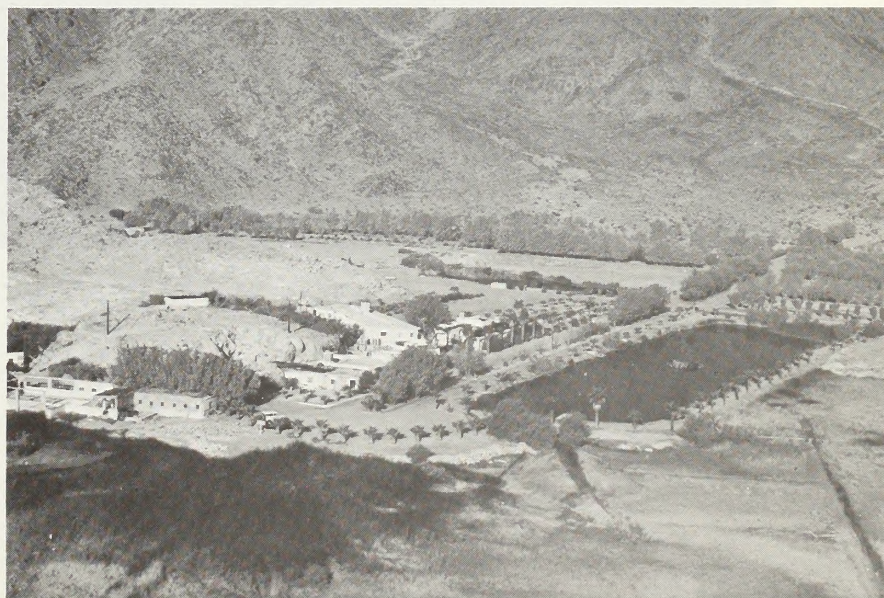
Photo # 6-2

The Tonopah &
Tidewater Railroad
grade near Soda
Springs, ORV course
to right of grade



Photo # 6-3

Old Fort Soda



AESTHETIC IMPACT EVALUATION -- BARSTOW/LAS VEGAS MOTORCYCLE RACE

Segment: #7

Kelbaker Road Crossing (E. of Baker)

Topographic Type: Flat

Vegetation Type: Creosote

Avr. Width of Course: 100'

Degree of Existing ORV Impact: M

H = High

Expected Additional ORV Impact: L

M = Medium

Overall Scenic Quality: L

L = Low

Remarks, Special Features, Etc.: Possible safety hazard exists as motorcyclists cross road. Dust clouds expected, and will be visible for many miles. Overall scenic quality low because of lack of variety of topographic and vegetative types except at Little Cowhole Mountain. (See Photos No. 7-1, 7-2).

Segment # 7



Photo # 7-1 Expansive creosote flatland near Little Cowhole Mountain

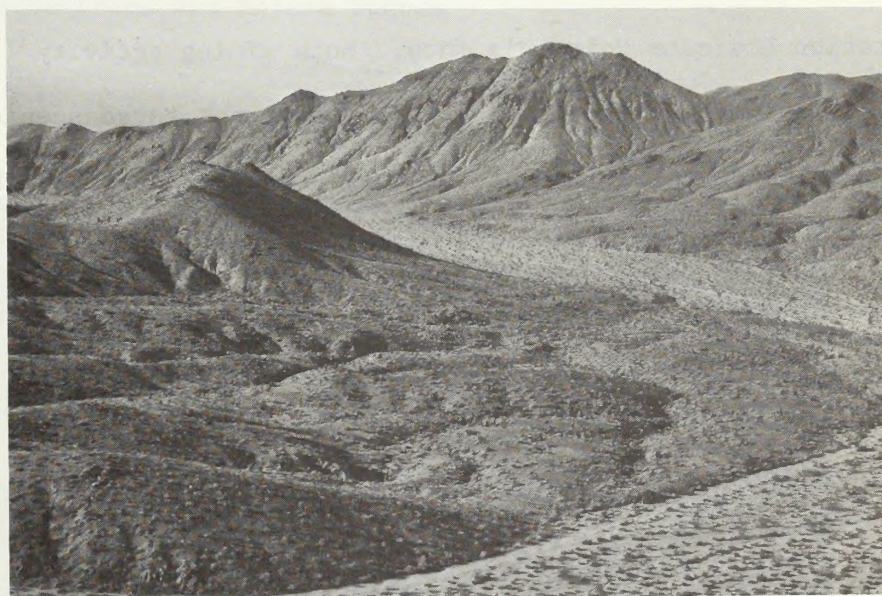


Photo # 7-2 Little Cowhole Mt., Race course follows wash in foreground

AESTHETIC IMPACT EVALUATION -- BARSTOW/LAS VEGAS MOTORCYCLE RACE

Segment: #8

Hyten's Well/Solomon's Knob

Topographic Type: Highly varied, mountainous, rugged, with intervening flats

Vegetation Type: Joshua Tree/Mojave Yucca

Avr. Width of Course: 20' - Course follows road closely

Degree of Existing ORV Impact: L H = High

Expected Additional ORV Impact: L M = Medium

Overall Scenic Quality: M L = Low

Remarks, Special Features, Etc.: This rugged area has extensive stands of Joshua Trees and Mojave Yucca. Black volcanics and a rich and varied vegetation dominate Solomon's Knob. Much mining activity (roads, pits, etc.) is evident in area. The area, though not rated scenically high on a desertwide basis, is one of the most scenic areas along the race route. (See narrative under specific "Recreation Activity Conflicts," as well as Photos No. 8-1 and 8-2).

Segment :# 8



Photo # 8-1 Rugged volcanic slopes of Solomon's Knob dotted with Joshua trees and Mojave Yuccas



Photo # 8-2 Flatlands near Solomon's Knob scarred from mining activities.

AESTHETIC IMPACT EVALUATION -- BARSTOW/LAS VEGAS MOTORCYCLE RACE

Segment: #9

Valley Wells Pit Stop

Topographic Type: Bajada type slope

Vegetation Type: Creosote

Avr. Width of Course: Under 50' - Course follows road

Degree of Existing ORV Impact: M H = High

Expected Additional ORV Impact: L M = Medium

Overall Scenic Quality: L L = Low

Remarks, Special Features, Etc.: The pit area is close to Highway I-15.

Dust, noise, and other visual distractions will be evident. Race may impose aesthetic intrusion upon small settlement of Valley Wells, 1 mile away. (See Photo No. 9-1).



Segment: # 9



Photo # 9-1 Valley Wells Pit stop area north of Valley Wells Station

AESTHETIC IMPACT EVALUATION -- BARSTOW/LAS VEGAS MOTORCYCLE RACE

Segment: #10

Clark Mountain North Route

Topographic Type: High Desert mountain range

Vegetation Type: Extremely varied

Avr. Width of Course: Under 20' - course follows road

Degree of Existing ORV Impact: L H = High

Expected Additional ORV Impact: L M = Medium

Overall Scenic Quality: H L = Low

Remarks, Special Features, Etc.: Clark Mt. has been identified as a potential natural area and an area of scenic and scientific importance.

A wide diversity of vegetation types, including an unusual desert fir forest, are found on this 8,000 foot high mountain. A race of 3,000 motorcyclists scars a natural-scientific area, raises many aesthetic questions and problems, even though rare vegetation types may, themselves, be not directly impacted. Aesthetic concerns, such as solitude, ecosystem integrity, and conflict with other activities need to be considered. This road is the only northern access to the mountain. (See narrative under "Impacts Upon Especially Significant Recreation Areas" as well as Photo 10-1.)

Segment No. 10



Photo #10-1 Clark Mt., North Route. North Route is in foreground, not shown.

AESTHETIC IMPACT EVALUATION -- BARSTOW/LAS VEGAS MOTORCYCLE RACE

Segment: #11

Clark Mountain - South Route

Topographic Type: High Desert mountain range

Vegetation Type: Extremely varied

Avr. Width of Course: Under 20' - Course follows road

Degree of Existing ORV Impact: L H = High

Expected Additional ORV Impact: L M = Medium

Overall Scenic Quality: H L = Low

Remarks, Special Features, Etc.: Clark Mountain has been identified as a potential natural area and an area of scenic and scientific importance. A wide diversity of vegetation types including an unusual desert fir forest are found on this 8,000-foot-high mountain. A race of 3,000 motorcyclists scars a natural-scientific area and raises many aesthetic questions and problems, even though rare vegetation types may, themselves, be not directly impacted. Aesthetic concerns, such as solitude, ecosystem integrity, and conflict with other activities need to be considered. The route passes through Pachalka Gardens, one of the finest stands of cacti in the Mojave Desert. Direct impact to vegetation could occur by motorcyclists straying from course. This road is the only access to the Gardens and may thus interrupt other visitor access as well as their aesthetic enjoyment in the area. (See narrative under "Impacts Upon Especially Significant Recreation Areas" as well as Photos No. 11-1 and 11-2.

Segment: # 11



Photo # 11-1 Southern route of race course across Clark Mt.



Photo # 11-2 Race course through Pachalka Spring and Cactus Garden

AESTHETIC IMPACT EVALUATION -- BARSTOW/LAS VEGAS MOTORCYCLE RACE

Segment: # 12

Ivanpah Lake

Topographic Type: Playa

Vegetation Type: Alkali sink vegetation on playa margins

Avr. Width of Course: 30'

Degree of Existing ORV Impact: M H = High

Expected Additional ORV Impact: L if dry; M if wet M = Medium

Overall Scenic Quality: L L = Low

Remarks, Special Features, Etc.: Overall scenic quality is low because of powerlines, train tracks, freeway, gas stations, and other intrusions. Vegetation is drab colored and unvaried.

(See Photo No. 12 -1).

Segment: #12



Photo # 12-1 Stateline pit stop on Ivanpah Lake

AESTHETIC IMPACT EVALUATION -- BARSTOW/LAS VEGAS MOTORCYCLE RACE

Segment: #13

Roach Lake - Nevada

Topographic Type: Playa

Vegetation Type: Alkali sink vegetation on playa margins

Avr. Width of Course: 30'

Degree of Existing ORV Impact: M H = High

Expected Additional ORV Impact: L if dry; M if wet M = Medium

Overall Scenic Quality: L L = Low

Remarks, Special Features, Etc.: Overall scenic quality is low because of man-made intrusions, such as powerlines, roads, railroad, etc. Vegetation is sparse, unvaried and drab in color. (See Photo #13-1).

Segment: #13



Photo # 13-1 Ivanpah Lake looking northeast from I-15; Roach Lake in distance.

Race course crosses Ivanpah Lake near powerline
between Ivanpah and Roach Lake

AESTHETIC IMPACT EVALUATION -- BARSTOW LAS VEGAS MOTORCYCLE RACE

Segment: # 14

Beer Bottle Pass - Nevada

Topographic Type: Canyon

Vegetation Type: Mojave Yucca/Creosote shrub

Avr. Width of Course: 10' - Course follows road

Degree of existing ORV Impact: M H = High

Expected Additional ORV Impact: L M = Medium

Overall Scenic Quality: M L = Low

Remarks, Special Features, Etc.: A definite visual disruption is a powerline which follows the canyon. Yet the canyon is quite impressive as a result of the geological features and accentuated vertical scale. Aesthetic impacts would derive from dust, noise, and commotion of race. (See Photo No. 14-1).

Segment: # 14



Photo # 14-1 Race course running northeast and parallel to
powerline corridor through Beer Bottle Pass.

Beer Bottle Canyon cuts through distant mountains.

AESTHETIC IMPACT EVALUATION -- BARSTOW/LAS VEGAS MOTORCYCLE RACE

Segment: # 15

Jean Lake - Nevada

Topographic Type: Playa

Vegetation Type: Creosote/Bursage, around lake

Avr. Width of Course: Less than 20'

Degree of Existing ORV Impact:	H	H = High
Expected Additional ORV Impact:	L	M = Medium
Overall Scenic Quality:	L	L = Low

Remarks, Special Features, Etc.: Jean Lake is a very high ORV use area. Heavy grazing is concentrated around the lake. Overall scenic quality is low due to these and other intrusions. (See Photo No. 15-1).

Segment #15



Photo # 15-1 Jean Lake Playa

AESTHETIC IMPACT EVALUATION -- BARSTOW/LAS VEGAS MOTORCYCLE RACE

Segment: # 16

Erie to Arden - Nevada

Topographic Type: Wash - dissected flats bordered by hills

Vegetation Type: Creosote

Avr. Width of Course: 20'

Degree of Existing ORV Impact:	H	H = High
Expected Additional ORV Impact:	L	M = Medium
Overall Scenic Quality:	L	L = Low

Remarks, Special Features, Etc.: Overall scenic quality is low as result of largely flat topography, drab coloration, common plant types. Intrusions include railroads, mines, roads, and high ORV impact. Course crosses two secondary roads and passes beneath Highway I-15 and therefore can cause dust and distraction. (See Photo No. 16-1).

Segment: # 16



Photo # 16-1 Race course running northwesterly through a pass in Sloan Mountain between Erie and Arden, Nevada.

AESTHETIC IMPACT EVALUATION -- BARSTOW/LAS VEGAS MOTORCYCLE RACE

Segment: # 17

Race Finish Area - Las Vegas, Nevada

Topographic Type: Flat

Vegetation Type: Creosote

Avr. Width of Course: 50'

Degree of Existing ORV Impact: H H = High

Expected Additional ORV Impact: L M = Medium

Overall Scenic Quality: L L = Low

Remarks, Special Features, Etc.: Finish area is terminus of many cross country ORV races and is highly impacted by past ORV use.

Area is of very low scenic quality due to urbanization, man-made intrusions, and lack of visual landscape color and variety. (See Photo No. 17-1).

Segment # 17

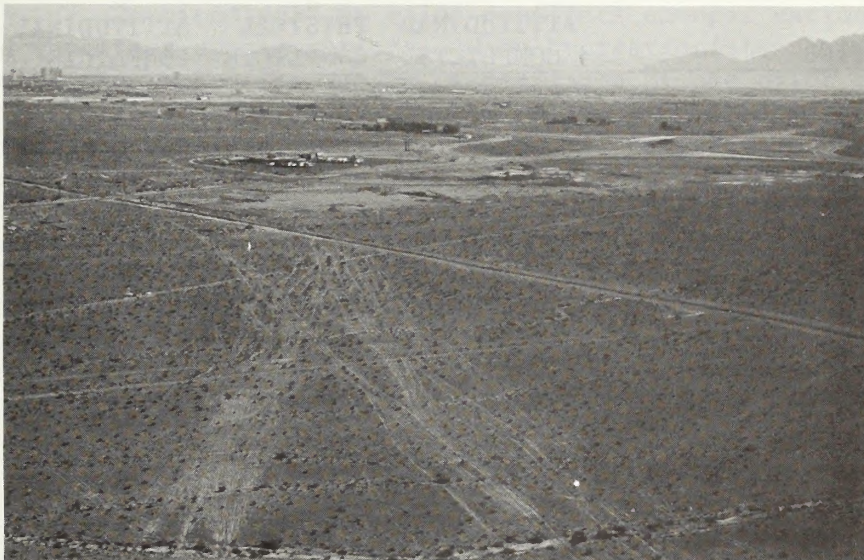


Photo # 17-1 Finish area of Barstow to Las Vegas Motorcycle Race, looking northeast.

TABLE III- C-3

POSSIBLE RECREATION EXPERIENCE CONFLICTS, Barstow/Las Vegas Race

EXPECTED

DEGREE OF CONFLICT H - High M - Medium L - Low	SHORT TERM (1-3 DAYS)		LONG TERM (INDEFINITE)	
	ATTITUDINAL CONFLICTS	PHYSICAL CONFLICTS	ATTITUDINAL CONFLICTS	PHYSICAL CONFLICTS
ACTIVITIES				
1. WILDERNESS EXPERIENCE	H	H	H	L
2. BACKPACKING & HIKING	H	H	H	L
3. NATURAL STUDY	H	H	H	L
4. LANDSCAPE PHOTOGRAPHY & PAINTING	H	H	M	L
5. CAMPING & PICNICKING	H	H	M	L
6. HUNTING	H	H	L	L
7. ROCK HOUNDING	M-H	H	M	L
8. DRIVING FOR PLEASURE	M	L	L	L
9. SHOOTING	L	H	L	L
10. LAND SAILING, SOARING, MODEL PLANE FLYING & MODEL ROCKET LAUNCHING	L	H	L	L
11. RECREATION VEHICLE USE	L	H	L	L

* The conflicts must be considered in the light of recreational participation rates, as well as satisfaction derived by race-associated users, although it should be recognized that the race, itself, may serve to suppress participation in other recreation activities.

Physical conflicts include those that are spatial and temporal and those that involve lost options. Spatial conflicts involve competition for space and the problems that ensue when different recreationists attempt to carry out their activities in the same space. Temporal conflicts arise out of competition for space as a result of conflicting timing. Lost options are those opportunities for recreation which are preempted by another recreation activity. Generally speaking, the more aggressive, consumptive, and uncontentative recreation activities preempt or drive out those that are more passive, unconsumptive, and contemplative.

"Attitudinal" or value conflicts amongst various recreationists are important considerations. Many recreationists' experiences are impaired by the lack of knowledge of conflicts of use prior to arriving at their favorite recreation site. Some also are disgusted with the thought that people would damage the land they may or may not want to use for a particular recreational activity. This is sometimes called the "existence factor". Knowing resources are "there" is a recreational satisfaction in itself for many people.

Specific conflicts with various recreational activities are described below.

b. Recreation Activity Conflicts

Wilderness Experience

Several visually diverse and spectacular areas along the racecourse are prime locations for a solitude experience. These include: West Cronese Dry Lake, Soda Lake, Solomon's Knob, Clark Mountain, and Pachalka Cactus Gardens. Recreation use on the California Desert is at its peak during the Thanksgiving weekend, thus one would expect to find use also high in the above areas. Numbers are not available; however, those recreationists seeking a wilderness experience usually avoid this area at this time because of the annual race.

The attitudinal impact of the race on the wilderness buff will probably be extremely high during the 6 to 8 hours of the actual race since the sight, smell, and sound generated by a large number of motorcycles racing across the desert would greatly distract from the feeling of remoteness and solitude. This resentment will diminish as the actual race subsides.

Backpacking and Hiking

Backpacking and hiking areas within the influence of the racecourse include the area around Halloran Spring from Cree Camp to Solomon's Knob, the Clark Mountain Range, and the Old Mojave Road along the Mojave River Basin. Use patterns are likely to follow those described above.

The attitudinal impacts on backpacking will be the same as those listed for wilderness experience and nature study. It is not known how many backpackers and hikers will have avoided the race areas precisely because the race is occurring.

TABLE III-C-4

RECREATION ACTIVITIES MOST LIKELY TO BE IMPACTED
ALONG SPECIFIC RACE COURSE SEGMENTS*

RECREATIONAL ACTIVITY	RACE START W. CRONESE LAKE E. CRONESE LAKE CRONESE VALLEY RD CROSSING RASOR PIT STOP SODA LAKE KELBAKER RD. HYTEN'S WELL/SOLOMON'S KNOB VALLEY WELLS PIT STOP CLARK MT., NORTH ROUTE CLARK MT., SOUTH ROUTE IVANPAH LAKE/STATELINE ROACH LAKE BEER BOTTLE PASS JEAN LAKE ERIE TO ARDEN RACE FINISH																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
WILDERNESS EXPERIENCE		L				L S		L S		L S	L S						
BACKPACKING & HIKING		S				S		S		S	S						
NATURE STUDY		L S	L S			L S		L S		L S	L S			L S			
LANDSCAPE PHOTOGRAPHY & PAINTING		L S	L S			L S		L S		L S	L S			L S			
CAMPING & PICNICKING		S	S		S			S		S	S						
ROCKHOUDING	S	S						S		S	S						
HUNTING								S		S	S						
DRIVING FOR PLEASURE	S		S	S	S		S		S	S	S	S	S			S	S
LAND SAILING, SOARING, MODEL FLYING & LAUNCHING																	
RECREATION VEHICLE USE (NON- COMPETITIVE)		S	S					S		S	S			S	S		

*See Map No. B-1

Legend:

S = Probable short term impacts that occur during the build-up for the race, during the actual race and as activities connected to the race subsides. They are from 1 to 3 day duration.

L - Probable long term impacts that remain for an indefinite time after the all racing activity has subsided.

Nature Study

Areas of high natural and cultural value located within the immediate route of the racecourse include: Clark Mountain Fir Forest proposed natural area, Pachalka Spring Cactus Gardens, and Soda Lake Playa, which contains archaeological, historical, and botanical areas of significance.

A high degree of adverse attitudinal impact is expected since most nature study enthusiasts are offended by the presence of motorcyclists and the threat they present to scenic, natural, and cultural values. Physical impacts are also expected to be high since the racecourse uses portions of the only available roads into all of these areas.

Photography and Painting

Each year, increasing numbers of photo enthusiasts and painters are reproducing desert scenes. The race event will have both adverse and beneficial impacts on these recreationists.

Adverse physical and attitudinal impacts will be incurred by those wishing to capture natural desert fall scenes due to competition created by the motorcyclists and their accompanying dust clouds, tracks, and noise. The race will provide a challenge to the photographer interested in the race as a spectacular sporting event.

Camping and Picnicking

Dispersed camping takes place along the race route. Less picnicking occurs because of distances involved from urban concentrations.

Popular camping areas include the Razor Pits, the Mojave River Basin, the Cree Camp area, and the Clark Mountain. Undoubtedly, camping also occurs at East and West Cronese Lakes as well as the Solomon's Knob area with its vegetative and topographic features.

Attitudinal impact of the race will be high for nonrace-associated campers and picnickers whose solitude and natural experiences will be diminished. Benefits will accrue to those campers who are connected with or turn out for the race. On the day of the race, there will undoubtedly be more of these race-enthusiast campers along the route than the former group.

Rockhounding

The proposed racecourse crosses some very interesting and unique geologic features and collecting areas. Notable areas are: Alvord Mountain, West Cronese Lake, Clark Mountain, and Holloran Spring.

Three factors that rockhounds consider essential are: (1) the abundance and quality of collecting materials, (2) access to the collecting area, and (3) availability of a camping spot large enough for sizeable groups. The latter two of these three factors would be impaired

during the running of this race. Even though both of these impacts are of a physical nature, attitudinal impacts are also expected to be high for a limited time.

Hunting and Shooting

A variety of small upland game hunting occurs along the proposed race route. Reduction of hunting opportunities will be attributable to the 3,000 racing motorcyclists who will effectively drive game to cover along the race route. Quail, chukkar, jackrabbit, and cottontail hunting will be especially depreciated along the popular upland game hunting areas between Halloran Spring and Clark Mountain. Deer season will be closed at the time of the race, and doves will have flown farther south by Thanksgiving. Some hunting for nonprotected species, e.g., coyotes, probably occurs along the race route.

Long-term impact caused by the race is expected to be low unless the race sets a precedent which precludes hunting in this area each year at this time.

Conflicts between target shooters and racers could be high due to unusually large numbers of recreationists in proximity to one another.

Driving for Pleasure

The proposed race route will be visible from U.S. Interstate 15 within 12 of the 17 recreation/aesthetic route segments already described. Impacts upon pleasure drivers out on the Thanksgiving holiday will be inevitable. California State Highway Department traffic counts indicate an average daily traffic total of approximately 16,000 vehicles on Interstate 15 at Barstow and 8,500 vehicles 70 miles east of Barstow (approximately the midpoint of the race route) (West, 1974). Some drivers will enjoy the sight of the racers. Others will react negatively to the dust, noise, petrochemical pollutants, and general commotion which intrudes upon their drive through the desert landscape. The safety hazard of pleasure drivers whose attention is diverted by the race must also be considered a potential adverse impact. Dust clouds which may obscure the vision of highway motorists may constitute an additional safety hazard.

Land Sailing, Glider Flying, Model Plane Flying, Model Rocket Launching

All of these activities require a dry, flat, relatively hard surface, such as a dry lake playa affords.

Roach and Jean Dry Lakes both receive a considerable amount of use from recreationists pursuing these activities, especially during the Thanksgiving weekend. The racecourse crosses both of these lakes and consequently imposes both physical and attitudinal conflicts upon other recreationists. Tracks or ruts may also remain and hamper future activities.

Recreation Vehicle Use

Recreational vehicle (RV) recreationists are as diverse in their preference for use areas and the activities they participate in as the variety of vehicles they use. This is important because personal interests, types of vehicles, and uses of the RV may influence land travel patterns and attitudes toward the landscape traveled.

A variety of outdoor recreational activities occur along the course of the proposed race route. Those who travel to engage in these activities are dependent upon many of the same roads as will be used by the racers. The physical impact upon existing roads by 3,000 motorcyclists will be substantial. Ruts and "whoop-dee-dooos" (wavelike crests and troughs produced by wheels spinning out dirt) will be induced along much of the route, and such surface irregularities from previous races will be intensified. The net result is further deterioration of roads and the likelihood that certain other desert recreationists, finding roads rough and unsatisfactory, will forego their activities along the zone of the race route.

Clark Mountain, Solomon's Knob, and Soda Lake are popular driving areas. Activity and land oriented recreation vehicle users in these areas or any other area where the race course follows a road or jeep trail will have their recreational pursuits impinged upon both physically and attitudinally by the race competitors.

c. Impacts Upon Especially Significant Recreation Areas

Certain areas are fragile or especially vulnerable to race impact. They are discussed below.

(1) Soda Lake Playa and Old Fort Soda

The proposed race route would pass by Old Fort Soda and cross Soda Lake Playa 1½ miles south of Soda Springs.

Soda Lake Playa has been identified as a potential natural area of scientific importance that merits special attention and management to insure preservation. The area is uniquely endowed with a variety of vegetation, avifauna, aquatic habitats, and water-salinity variations.

(2) Tonopah and Tideland Railroad

The old grade of the Tonopah and Tidewater Railroad is crossed by the proposed motorcycle route on Soda Lake 1½ miles south of Soda Springs. The railroad grade is an earthen berm which is of considerable interest to history buffs and desert sightseers and hikers. Old ties may still be seen along the grade.

This unusual "desert community" railroad, which operated between Beatty and Ludlow during 1907-1937, remained one of the few small, independent railroads in California. The old grade affords the rare opportunity to view remains of this historically significant enterprise.

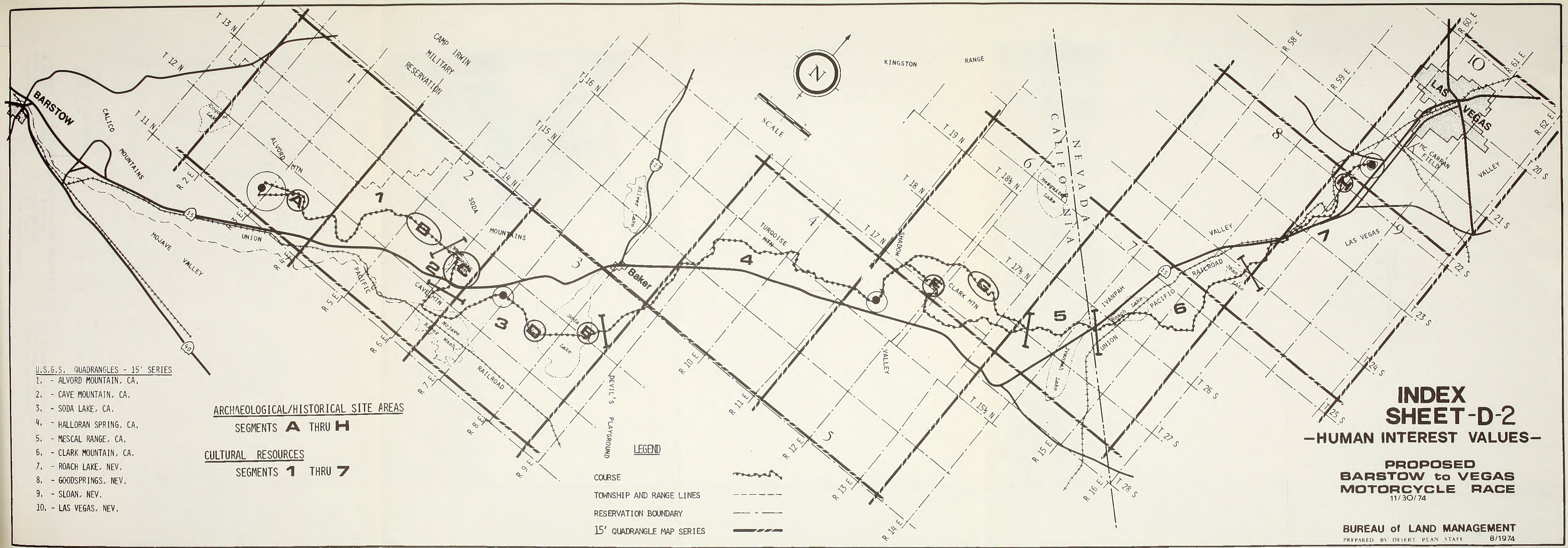
— HUMAN INTEREST VALUES —

ARCHAEOLOGICAL/HISTORICAL SITE AREAS : SEE INDEX SHEET D-2

- A. BV-1
- B. BV-2, BV-3, BV-4
- C. EAST CRONESE LAKE
- D. BV-5, OLD GOVERNMENT ROAD, AND TONAPAH/TIDEWATER
RAILROAD
- E. BV-6, BV-7
- F. PACHALKA SPRING
- G. CLARK MOUNTAIN
- H. BV-8

CULTURAL RESOURCES : SEE INDEX SHEET D-2

- 1. COYOTE LAKE THROUGH WEST CRONESE LAKE
- 2. WEST CRONESE LAKE THROUGH EAST CRONESE LAKE
- 3. EAST CRONESE LAKE THROUGH SODA LAKE
- 4. SODA LAKE THROUGH CLARK MOUNTAIN
- 5. CLARK MOUNTAIN THROUGH IVANPAH LAKE
- 6. IVANPAH LAKE THROUGH JEAN LAKE
- 7. JEAN LAKE THROUGH BLUE DIAMOND



U.S.G.S. QUADRANGLES - 15' SERIES

1. - ALVORD MOUNTAIN, CA.
2. - CAVE MOUNTAIN, CA.
3. - SODA LAKE, CA.
4. - HALLORAN SPRING, CA.
5. - MESCAL RANGE, CA.
6. - CLARK MOUNTAIN, CA.
7. - ROACH LAKE, NEV.
8. - GOODSPRINGS, NEV.
9. - SLOAN, NEV.
10. - LAS VEGAS, NEV.

ARCHAEOLOGICAL/HISTORICAL SITE AREAS

SEGMENTS **A** THRU **H**

CULTURAL RESOURCES

SEGMENTS **1** THRU **7**

LEGEND

- COURSE
- TOWNSHIP AND RANGE LINES
- RESERVATION BOUNDARY
- 15' QUADRANGLE MAP SERIES

INDEX
SHEET-D-2
-HUMAN INTEREST VALUES-

PROPOSED
BARSTOW to VEGAS
MOTORCYCLE RACE
11/30/74

BUREAU of LAND MANAGEMENT
PREPARED BY DESERT PLAN STAFF 8/1974

Table III-C-1

EVALUATION OF PROPERTIES FOR NATIONAL REGISTER OF HISTORIC PLACES ELIGIBILITY

Property	Integrity**	Density & Abundance of Archaeological Resources	Best Extent or Only Surviving Vestige	Unique	Scientific or Educational Value	National Register Criteria ***	Criteria of Effect ****
1. BV-1	L	H	M	M	M	-	N/A
2. BV-2, BV-3, BV-4	L	M	L	L	M	-	N/A
3. East Cronese Lake	H	H	H	H	H	+	-
4. BV-5	M	M	M	M	M	+	-
5. BV-6	L	L	L	?	L	-	N/A
6. BV-7	L	L	M	L	M	-	N/A
7. Pachalka Spring	M	H	?	H	H	+	-
8. BV-8	L	L	M	L	M	-	N/A
9. Old Gov't Rd. *	M	L	L	L	L	+	-
10. Tonapah & Tidewater Railroad *	M	M	M	M	L	+	-

* Area of Action's Potential Environmental Impact Only

** 36 CFR 8:800.10(a)

*** 36 CFR 8:800.10

**** 36 CFR 8:800.8

H = High

M = Medium

L = Low

? = Undetermined

+ = meets criteria

- = does not meet criteria

N/A = not applicable

A wide motorcycle crossing of the old grade would severely and unnecessarily damage this historic relic.

(3) Pachalka Cactus Gardens

The proposed 1974 racecourse cuts through Pachalka Spring and Cactus Gardens on the south slope of Clark Mountain near the California-Nevada border.

The Cactus and Succulent Society of America has identified the Pachalka Gardens as one of special significance for its concentrated numbers and species of desert cacti. This is one of the finest stands of cacti in the eastern Mojave Desert. Pachalka Spring and the area around the abandoned mine are located on private property.

3. Cultural (Archaeology and History)

a. General Impact

Fragile archaeological sites such as those along the route of the proposed race are extremely vulnerable and cannot take much impact before information which they could yield is lost forever. Impact could come directly from the race itself as well as from spectators and pick-up crews. Direct (primary) impact can come in the form of the physical destruction caused when wheels of vehicles come in contact with archaeological and historical sites. Indirect impact can come from increasing accessibility to and awareness of cultural sites which could cause additional impact by vehicle use in the area long after the race and by increasing the potential for vandalism or illegal collection.

b. Specific Impacts

Table III-C-2 assesses the unmitigated direct and indirect impact to the recorded archaeological and historical sites within 3 miles of the race course. Field assessment revealed only 10 properties within the area of the undertakings' potential environmental impact. Specific impacts are discussed below.

(1) Start, Pits, and Finish - There will be no direct impact on cultural resources at these locations.

(2) Racecourse - The proposed action crosses through 10 acres of archaeological and/or historical importance. However, significant new direct impact is anticipated in only three of these areas. Direct impact in the other seven areas is not expected to be increased by the proposed race. The 9 areas of cultural resources are discussed below.

BV-2, BV-3, and BV-4: The proposed racecourse is expected to directly impact all three of these sites. Uncontrolled crossing of the fragile surface sites would continue the destruction that previous races have caused. Past races have crossed these sites in a swath over 200

meters wide. Limiting the width of the course across these sites will have the effect of reducing the impact to an insignificant level.

East Cronese Lake: No direct impact is expected to occur in the East Cronese Lake area since all the sites are situated in the sand dunes above the route of the proposed racecourse. Archaeological site SB-1]9, located at the southern end of Cronese Valley, will not be affected since the proposed course runs through the wash bottom and is separated from the site by a large flood control levee.

BV-5: Following a previous year's course, the proposed race route comes off of the sandy fans and crosses BV-5 through about 50 meters of a mesquite dune before dropping into the blowout area along the southwest side of Soda Playa. The course is restricted to the existing route through the mesquite dunes thus reducing impact to this portion of the site. The proposed course crosses through approximately 100 meters of the blowout area of the site. Unmitigated impact here could be extensive. If the course can be kept to the existing ORV road through the site then additional impact to this portion of the sites should be low. (See Mitigation - Section IV.)

BV-6 and BV-7: Continued racing across these sites would cause the loss of valuable cultural resources. Therefore, the course route is being changed under the mitigation to avoid crossing either site. Thus, the proposed action will cause no direct impact to BV-6 and BV-7.

Pachalka Spring: New direct impact on the four archaeological sites at Pachalka Spring is anticipated to be nonexistent. Two of the sites are petroglyph sites which will not be impacted by motor-cycles. The other two sites are located on existing roads. The impact of vehicles traveling on the existing road should not further deteriorate the archaeological resources.

Clark Mountain: The probable archaeological resources of the Clark Mountain area should not be directly impacted by the proposed action. The racecourse will follow existing roads through this area. This route is one of several alternates and may not be run at all.

BV-8: Further direct impact to this small, highly disturbed lithic scatter site is expected to be insignificant from the proposed action as it crosses on an existing road.

Tonopah and Tidewater Railroad: No additional direct impact is expected on the Tonopah and Tidewater Railroad grade by the proposed race. The course crosses the berm in one location which has been utilized in the past by races and traffic on the existing road.

Old Government Road: Archaeological reconnaissance of the race course in the area where this historic trail may cross yielded no evidence of such a road. Therefore no impact is expected.

Old Fort Soda: The entire locality has already been severely impacted by the Zyzzx Springs resort development. The race will have no effect on this area.

(3) Spectators and Camping

Site BV-1 is located along a ridge southeast of the start. This extensive quarry and workshop site has been subject to extreme disturbance from past race starts and spectators. Without mitigation the proposed race could have a drastic direct impact on the site as this is a good vantage point from which to view the start. There will be no impact by spectators and campers on cultural resources at the finish and pit areas as none are located in these areas. However, mitigation will bar spectators from the site eliminating impact.

c. National Register of Historic Places

Ten properties that could possibly fall within the area of the undertakings' potential environmental impact and located on Index Sheet D-2. These properties are (1) BV-1; (2) BV-2, BV-3 and BV-4; (3) East Cronese Lake; (4) BV-5; (5) BV-6; (6) BV-7; (7) Pachalka Spring; (8) BV-8; (9) Old Government Road; and (10) Tonapah & Tidewater Railroad.

The National Register Criteria (63 CFR 800.10) was applied to each of the 10 cultural resource properties. Table III-C-1 outlines the evaluation of the properties for National Register of Historic Places eligibility. Five of these properties appear to meet the National Register criteria. Four of these five properties are portions of larger areas which have been previously identified by the BLM Desert Planning Staff Archaeologist as potential candidates for nomination to the National Register of Historic Places as archaeological or historical districts. These properties are East Cronese Lake Archaeological District, Mojave Sink Archaeological District (BV-5 is situated in the extreme northern portion of this potential nomination), Old Government Road Historical District, and the Tonapah & Tidewater Railroad Historical District. Because of its unique location and archaeological potential, an additional property, Pachalka Spring, has been identified as appearing to be eligible for National Register nomination.

Determination of Effect. To determine whether the undertaking shall be considered to have an effect on the properties identified as eligible for inclusion in the National Register of Historic Places (36 CFR 800.4(a)(2), the Criteria of Effect, set forth in 36 CFR 800.8, was applied to each.

East Cronese Lake: The proposed race course will not impact any of the archaeological resources and will not change the quality of character that qualifies the property. The proposed course through the potential National Register property follows an existing motorcycle trail that has been used for previous races for more than five years. Nevertheless, the permittee will be required under the supervision of BLM personnel, to extensively mark and flag the course through the area and to provide course marshals to guarantee that there will be no impact to the cultural resources.

BV-5: The proposed course follows the route of an existing motorcycle trail for about 150 feet through the mesquite dune on the western side of BV-5 before dropping into the blowout area along the southwest side of Soda Playa. To guarantee that the riders will stay on the course through the mesquite dune the course will be flagged and marked to funnel the riders into the dune where natural physical restraints limit the course width to about five feet. Out of the mesquite dune, the course will be limited to the existing road through the blowout area and across the playa. Course marshals and BLM personnel will be strategically situated in this area to provide additional protection. With the above mitigations, the proposed undertaking will not cause any change in the quality of character that qualifies the property for nomination to the National Register of Historic Places.

Pachalka Spring: New direct impact to the cultural resources at Pachalka Spring is anticipated to be non-existent. The proposed course through this location follows a graded road that stays to the south of the main spring area. The road that loops into the spring area will be blocked and course marshals will be present to provide protection. With these measures, the undertaking will not change the quality that qualifies the property under the National Register criteria.

Old Government Road: The area where the Old Government Road is believed to have crossed the route of the proposed course is covered by the protection measures discussed for BV-5. Since the proposed course through this area will be tightly controlled, the undertaking will not change the quality that qualified the Old Government Road for nomination to the National Register.

Tonopah & Tidewater Railroad: The portion of the Tonopah and Tidewater Railroad bed which the proposed course crosses is an existing dirt road that runs east across Soda Lake. To prevent further deterioration to the old railroad grade, crossing will be limited to the existing road. This will be adequately marked and flagged and course marshals will be present to provide added protection. The proposed undertaking will not further chance the quality of the character that qualifies the Tonopah and Tidewater Railroad for eligibility for the National Register of Historic Places.

In compliance with the Advisory Council on Historic Preservation's procedures (36 CFR 800.4) the staffs of the State Historical Preservation Officers have been contacted and sent the draft environmental statement to review. A meeting was held with the staff of the California State Historical Preservation Officer. Pursuant to this meeting, the California State Historical Preservation Officer has been requested in writing to jointly concur with the findings upon applying the National Register criteria and the Criteria of Effect to all cultural resource properties identified as being within the area of the undertakings' environmental impact.

BARSTOW TO LAS VEGAS MOTORCYCLE RACE - 1974
 Archaeological Site on and Near Race Course
 Unmitigated Impact Assessment

SITE NO.	LOCATION	SITE DESCRIPTION	IMPACT*		COMMENTS
			DIRECT	INDIRECT	
SBCM-682A	Alvord Mtn USGS 15'	lithic scatter around small playa	N	L ?	Associated with Coyote Lake
SBCM-685A&B	Alvord Mtn USGS 15'	lithic scatter around small playa	N	L ?	Associated with Coyote Lake
SBCM-1831	Alvord Mtn USGS 15'	lithic workshop debris	N	L	
SBCM-1830	Alvord Mtn USGS 15'	lithic workshop debris	N	L	
SBCM-1832	Alvord Mtn USGS 15'	lithic workshop debris	N	L	
BV-1	Alvord Mtn USGS 15'	large quarry area along top of ridge	N	H	Spectator impact
SBCM-1833	Alvord Mtn USGS 15'	lithic workshop debris	N	L	
BV-2	Cave Mtn USGS 15'	Cores & flakes scattered loci	H	L	existing course runs through site
BV-3	Cave Mtn USGS 15'	Cores & flakes scattered loci	H	L	existing course runs through site
BV-4	Cave Mtn USGS 15'	Cores & flakes scattered loci	H	L	existing course runs through site
SBR-128	Cave Mtn USGS 15'	Lithics & pottery in dunes	N	N	
SBR-129	Cave Mtn USGS 15'	Lithics, pottery, bone in dunes	N	L	relocated 8/10/74
SBR-242	Cave Mtn USGS 15'	Lithics, pottery, charcoal in dunes	N	L	
SBR-243	Cave Mtn USGS 15'	Lithics, pottery, charcoal in dunes	N	L	

* - H = High
 M = Medium
 L = Low
 N = Negligible

Unmitigated Impact Assessment

SITE NO.	LOCATION	SITE DESCRIPTION	IMPACT*		COMMENTS
			DIRECT	INDIRECT	
SBR-244	Cave Mtn USGS 15'	Pottery - on shoreline	N	L	may have been collected
SBR-245	Cave Mtn USGS 15'	unworked flakes	N	L	
SBR-246	Cave Mtn USGS 15'	campsite in dunes tortoise shell pottery	L	L	
SBR-247	Cave Mtn USGS 15'	Lithics, pottery, charcoal in dunes	L	L	
SBR-248	Cave Mtn USGS 15'	Pottery	L	L	Course runs very close to this site - poor evidence of site
SBR-249	Cave Mtn USGS 15'	Cremations, with pottery tourquoise & lithics	M	L	
SBR-250	Cave Mtn USGS 15'	Pottery in dunes - Pottery 'pot shaper'	L	L	
SBR-251	Cave Mtn USGS 15'	Lithics & pottery in dunes	L	L	Site collected SBCM (?)
SBR-252	Cave Mtn USGS 15'	Lithics & pottery in dunes	L	L	
SBR-253	Cave Mtn USGS 15'	Pottery in dunes	L	L	
SBR-254	Cave Mtn USGS 15'	Pottery in dunes	L	L	
SBR-255	Cave Mtn USGS 15'	Pottery in dunes	N	L	
SBR-256	Cave Mtn USGS 15'	Pottery in dunes	N	L	
SBR-257	Cave Mtn USGS 15'	Pottery & lithics in dunes	N	L	Possible SW Pottery

* - H = High
M = Medium
L = Low
N = Negligible

BARSTOW TO LAS VEGAS MOTORCYCLE RACE - 1974
 Archaeological Site on and Near Race Course
 Unmitigated Impact Assessment

SITE NO.	LOCATION	SITE DESCRIPTION	IMPACT*		COMMENTS
			DIRECT	INDIRECT	
SBr-258	Cave Mtn USGS 15'	Pottery in dunes	N	L	
SBr-259	Cave Mtn USGS 15'	Pottery in dunes	N	L	
SBr-260	Cave Mtn USGS 15'	Pottery in dunes	N	L	
SBr-261	Cave Mtn USGS 15'	Lithics & pottery in dunes, bone & charcoal	N	N	Excavated G. Smith 1960
SBr-363	Soda Lake USGS 15'	Old Fort Soda "ZZYZX" Springs	N	N	Historic Site BLM protection now-closed to public
BV-5	Soda Lake USGS 15'	Pottery & lithics in dunes & at playa edge	H	L	Existing course runs through site
BV-6	Soda Lake USGS 15'	Lithics-sparse scatter at Spring Mound	L	L	Already highly disturbed-Warren's Site #14-may have been collected by Warren or SW Museum
BV-7	Soda Lake USGS 15'	Lithic scatter in sands & blowout on playa edge	H	L	Course runs through site
SBr-131	Halloran Spring USGS 15'	Petroglyphs	N	L	
SBr-205	Halloran Spring USGS 15'	Pottery and lithics	N	L	
SBr-208	Halloran Spring USGS 15'	Pottery and lithics	L	L	
SBCM-1164	Halloran Spring USGS 15'	Bed rock metate slicks	N	N	
SBCM-1165	Halloran Spring USGS 15'	Petroglyphs	N	L	
SBr-133	Mescal Range USGS 15'	Lithic scatter	N	N	

* - H = High
 M = Medium
 L = Low
 N = Negligible

TABLE III-C-2 (Cont'l)

BARSTOW TO LAS VEGAS MOTORCYCLE RACE - 1974
 Archaeological Site on and Near Race Course
 Unmitigated Impact Assessment

P. 4 of 4

SITE NO.	LOCATION	SITE DESCRIPTION	IMPACT*		COMMENTS
			DIRECT	INDIRECT	
S8CM-1171	Mescal Range USGS 15'	Pleistocene fossils	N	N	Excavated-S8CM-Dr. Smith Pinto Points
S8CM-1140(?)	Mescal Range USGS 15'	Pleistocene fossils	L	N	
S8CM-1122	Clark Mtn USGS 15'	Petroglyphs	N	L	Very close to course
S8LM-1142	Clark Mtn USGS 15'	Petroglyphs	N	L	
S8LM-1545	Clark Mtn USGS 15'	Midden (?)	L	L	Course runs thru site
S8CM-429	Clark Mtn USGS 15'	Midden-fire cracked rock	L	L	
wrong #) S8r-134	Roach Lake USGS 15'	(?)	L	L	May be destroyed-unable to locate in 1973-pit area
BV-8	Sloan, Nev. USGS 15'	Sparse lithic tool scatter	L	L	Race course runs through site
	Soda Lake USGS 15'	Old Government Road	L	L	Appears to have existing road on it in race area
	Soda Lake USGS 15'	Tonapah-Tidewater RR Grade	L	L	Course & road cross the grade. 4-wheel vehicle tracks on top of it
	Alvord Mtn USGS 15'	Old Spanish Trail	N	L ?	Trail obliterated in race area. Exact route not known historically.

* - H = High
 M = Medium
 L = Low
 N = Negligible

4. Human Population

a. Primary Race Impacts:

The primary environmental impacts on the proximate human population by the proposed race are increased particulate and noise pollution. The dust created, especially at the starting grounds, will not settle for hours. The degree of impact will be directly related to the wind velocity and direction. However, downwind from the prevailing winds there are no major towns or settlements.

There are no forms of human habitation which will receive direct impact from the noise of the race. The course circumvents all settlements and no dwelling units were counted near the course on a fly-over. Hence, the noise impact on the human population is negligible.

At the start, near pit areas, and at the finish, there will be vehicle and people congestion. Most of the people affected, off the highways, are spectators or participants in the event, and to them, this congestion is an accepted inconvenience.

In general, the primary impacts from the proposed race on the potentially affected human population are low.

b. Beneficial Economic Impacts:

The gas stations, motels, eating establishments, and other commercial tourist facilities of Barstow and to a lesser degree, Las Vegas, will experience a sizeable income increase during the event. This input has not been accurately measured in the past, but for Barstow it has been estimated that twelve to fifteen thousand people attended this race in 1973. The spending potential for an influx of people this large can be counted near several hundred thousand dollars.

Equally, the communities of Baker, Stateline, and other gas stations along the route will have an increase in sales. However, as the race progresses, many riders drop out of the contest, resulting in fewer support teams necessary along the course in the far eastern portions of California and in Nevada. Historically, less than one third of the total number of entrants finish the race.

These beneficial impacts to Barstow and other places must be rated as high. Also, there are indirect positive impacts for Barstow and Las Vegas derived from the nationwide publicity brought about by this major motorcycle event, such as generation of additional tourism.

c. Other Social Conflicts and Benefits:

There are several other "social" impacts which have been noted from previously held Barstow-Las Vegas races. Most significant are the increase in freeway traffic and the congestion that builds up at the on-off ramps at the starting area and cross-over points (i.e., Manix, Basin Road, Rasor Road, Holloran Springs, Cima Road, Stateline, Jean). In addition to the support crews for the racers, spectators and other travellers stop at these points to watch and aid the racers. Special assignments have to be made by the California Highway Patrol to direct traffic and minimize auto safety hazards. It is reported to have taken 4 to 5 hours for traffic to clear out at the on-off ramp to the starting grounds. However, there is not a significant increase in the number of accidents or incidents reported by the California Highway Patrol. The participants and spectators are generally a well-mannered and safety-conscious group.^{1/}

There is also, but to a lesser degree, an increased congestion in the city of Barstow on the several days prior to the race. Most motel rooms are utilized and restaurants are crowded. However, both the City Police Department and the San Bernardino County Sheriff's Office state that there are no significant police problems in association with this congestion or other parts of the race. No special assignments are made for the days of the event.^{2/}

There is also a potential for delay in emergency services at the local hospital in Barstow. There are usually 25 to 30 injuries to riders as a result of the race, but most of these are managed by Rescue-3, a well-organized and equipped volunteer group from Barstow that travels along with the race.

1. Personal communication in interview with Lt. Lawrence Stanley, Asst. Supervisor, Barstow office of the California Highway Patrol on August 9, 1974.
2. Personal communications from Capt. Edgar Burke, Asst. Chief of Police, City of Barstow, and Sgt. Gene Rogers, Acting Commander, San Bernardino County Sheriff's Office at Barstow, in interview of August 9, 1974.

Direct and indirect "social" benefits are also derived from this event both by primary spectators and the supporting public. These are intangible but nonetheless real. For the many people who travel from the Los Angeles area to the desert, the race is a recreational experience to watch. And there is a strong public sentiment felt in Barstow for this "annual" event. It is espoused openly by those who benefit economically, but also it seems a source of pride to the general community culture.

In summation then, it can be said that there are medium to low social conflicts resulting from this event, given its size. And there are also medium to high economic and social benefits which can occur.

D. Other Uses

1. Private Lands

The majority of the race (132 miles) is on BLM administered lands; some, however, (23 miles) does cross privately owned properties. These private holdings are, for the most part, undeveloped and the natural resources on the undeveloped lands will be impacted to the same degree as those on the public lands.

Some of the private lands contain houses or businesses. The houses are located near Arden, Nevada, and near the finish line; the businesses are located at Stateline, Nevada, and consist of the typical Nevada freeway services such as a gambling casino, restaurant, and gas station.

During the 1973 Barstow-Vegas race, a pall of dust was created by the racers and spectators near the finish line. The same dusty conditions can be expected again.

Another temporary adverse impact could be caused by the congestion of traffic, primarily campers and nonparticipant motorcyclists, at the pit areas and the finish line.

No adverse impacts are predicted in the business area at Stateline. In fact, the race should bring more revenue to the businesses located there.

2. Rights-of-Way

No adverse impacts are expected to occur to the physical facilities on rights-of-way, such as powerlines and railroad tracks. However, where the race is on dirt or gravel roads pertinent to the rights-of-way, impacts can be expected to occur in the way of humps or "whoop-de-doos" caused by the spinning drive wheels of the motorcycles.

3. Grazing

Indications are that there will not be a conflict between livestock and the motorcyclists because there will be little or no livestock in the racecourse vicinity during the race. Nor should there be damage to the range improvements in the area because the riders will cross the fences at established gates and will miss the reservoirs by at least one-quarter of a mile.

The one well at the east edge of Soda Lake that the course passes near will not be impacted as there will be no livestock in the area at the time of the race.

The first part of the book is devoted to a general history of the subject. It begins with a discussion of the early history of the subject, and then goes on to discuss the development of the subject in the modern world. The author discusses the various theories and methods that have been used to study the subject, and then discusses the various applications of the subject to the real world.

The second part of the book is devoted to a detailed discussion of the various theories and methods that have been used to study the subject. The author discusses the various theories and methods that have been used to study the subject, and then discusses the various applications of the subject to the real world.

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IV. Mitigating Measures Included in the Proposed Action

Mitigation measures which are included in the proposed action are limited to those responsibilities, commitments, and stipulations that are directly related to the Special Land Use Permit (SLUP) issued for this event. Hence, the mitigation measures fall under two categories -- (1) the BLM's responsibilities and commitments, and (2) the Special Conditions required of the permittee by the SLUP.

A. BLM Responsibilities

The Bureau of Land Management will be responsible for the following:

1. Conducting compliance inspections prior to, during, and after the event to insure that all special conditions required by the SLUP have been met.

Bureau of Land Management personnel will check for compliance with the terms of the permit prior to, during, and after the event. Pre-event compliance entails 1 day of office time to confirm by telephone that the sponsor has alerted state and local law enforcement agencies in California and Nevada to the expected concentrations of people, that the search and rescue field communications organization is committed to working with the sponsor, that private landowners have been contacted wherever their lands may be involved, and that adequate insurance coverage has been acquired by the sponsor. The pre-event compliance checks in the field will entail at least 12 man-days for 4 Ranger-Resource Specialists and 2 Resource Staff Specialists to accompany the sponsor's staff to insure adequate course marking (as defined by the Authorized Officer's representative) and specific course marking through or around important resource sites. During the event, a minimum of 20 BLM personnel will be distributed at the start area, the finish area, and at specific locations along the course to monitor compliance. For the post-event compliance check, 2 BLM personnel will spend 3 days checking the user concentration areas for cleanup of debris and the course for cleanup of course markers and unanticipated or excessive resource damage.

2. Providing adequate field personnel to properly monitor the action.

The 20 Bureau of Land Management personnel performing the during-event compliance checks are the course monitors, and they are engaged in that activity on race day. These personnel will identify and document deviations from the established racecourse.

3. Establishing Environmental Sampling Plots and aerial photo points to provide proper monitoring of the race and related activities.

Baseline photographic plots will be established before the race to document the present state of key resources along the proposed course. Photography will be used to record precise sizes, shapes, and density of vegetation, soils, archaeological features, and other resources that are not accurately remembered by observers.

Ground and aerial photos will be included at each established Environmental Sampling Plot (E.S.P.). On the ground, a series of 11 oblique photos will be taken from a leveled tripod at 4½ feet above ground to include a 360-degree view. With a 360-degree view, the plot can be relocated even if reference stakes were inadvertently destroyed. The photos will be taken with 35 mm color film.

The aerial photos will be vertical, low-level (large-scale), 70 mm transparencies. These photos will allow a quantification of changes in vegetation density and composition and soil alterations. Flight height, ground datum, camera, and lens type will be recorded so that the horizontal scale of the photos can be calculated. Approximately six aerial photos will be taken to cover each ground photo plot.

Twenty-five E.S.P.'s will be established to assess the critical vegetative, soils, visual, archaeological, and historical resources. These will be photographed before and after the race. The exact E.S.P. locations and subjects are not included here to avoid encouraging alterations of each plot. (For location of E.S.P. plots, see Sheet Index Map E-1).

In addition to photos, one or more representative soil samples will be collected and analyzed for each E.S.P.

E.S.P.'s will be rephotographed on the ground after the race. Plots where environmental changes are evident will also be rephotographed from the air. Plots will be checked monthly during February through June at the lower elevations, 1500 to 4000 feet; April through September at the higher elevations. These plots will be rechecked on an annual basis.

B. Special Conditions of the SLUP

The Special Conditions added to the SLUP include mitigation measures which would be required of the permittee. The Supplemental Mitigation List and accompanying map would be included with the Special Conditions as a permanent part of the SLUP. The mitigation measures inherent in the Special Conditions are briefly discussed below, and the Special Conditions as they would appear on the SLUP are attached.

1. Performance of Bond

The requirement for a performance bond will be added to the SLUP (Special Condition 1). The amount of the bond will be determined by the District Manager before the permit is issued, after careful consideration of the factors described and analyzed in this EIS. Such factors will include but not be limited to the size of the event in numbers of entrants and spectators, fees likely to be generated in accordance with the terms of the permit, requirements for cleanup, trash removal, removal of course markings, and any foreseeable need for rehabilitation of course use areas.

It is understood that the race will substantially deteriorate the surface quality of existing roads used during the race in that ruts and "whoop-dee-does" will be created or intensified. Appropriate rehabilitation measures to eliminate these impacts will be determined and required by the District Manager.

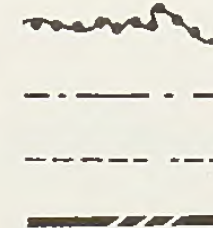
U.S.G.S. QUADRANGLES - 15' SERIES

1. - ALVORD MOUNTAIN, CA.
2. - CAVE MOUNTAIN, CA.
3. - SODA LAKE, CA.
4. - HALLORAN SPRING, CA.
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6. - CLARK MOUNTAIN, CA.
7. - ROACH LAKE, NEV.
8. - GOODSPRINGS, NEV.
9. - SLOAN, NEV.
10. - LAS VEGAS, NEV.

7 GENERAL LOCATION
OF ENVIRONMENTAL
SAMPLING PLOTS.

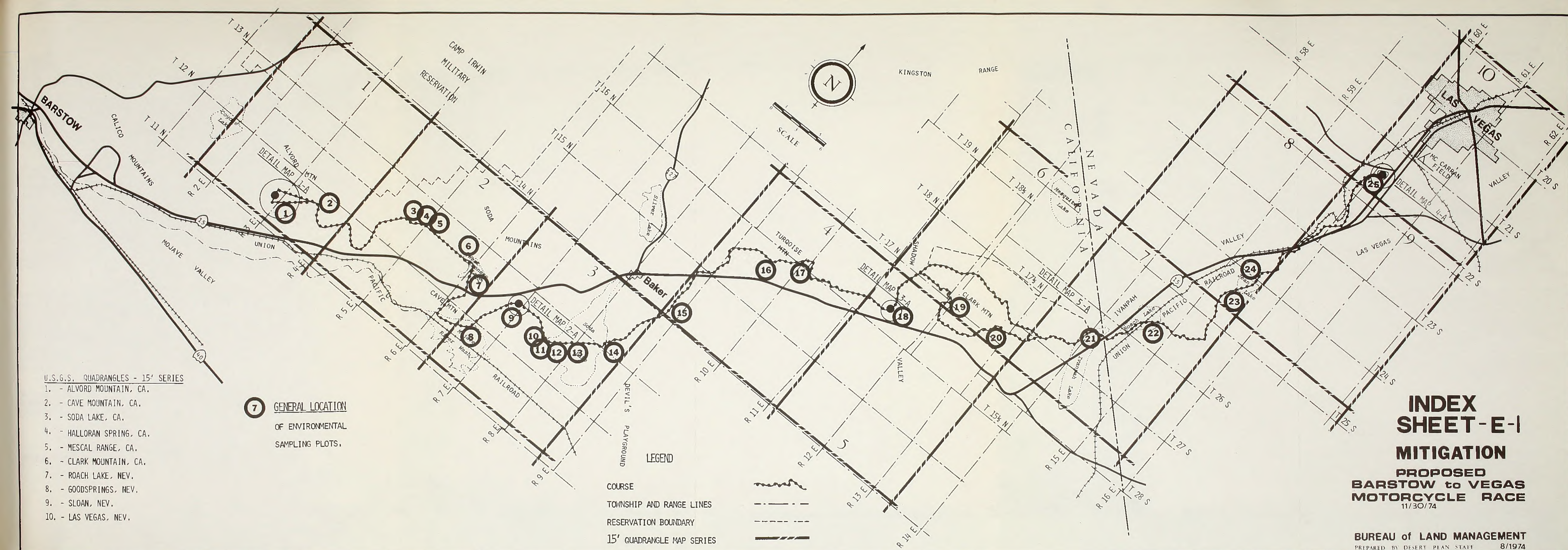
COURSE
TOWNSHIP AND RANGE LINES
RESERVATION BOUNDARY
15' QUADRANGLE MAP SERIES

LEGEND



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2. Course Marshals and Course Control

The permittee will be required to provide a minimum of 100 course marshals who will be placed at strategic locations identified by the BLM (see Section IV C) in order to insure participant and spectator safety, resource protection, traffic and crowd control, and adherence to the marked course (Special Conditions 5 and 6). In addition to the practice of providing course marshals at the start area, the finish, each pit stop, and each check point, the BLM has identified locations at which the permittee will be required to provide additional course marshals. All of the locations at which the BLM will require the permittee to provide course marshals are specifically identified on the Supplemental Mitigation List and plotted on a course map which will be attached to the SLUP.

The permittee will also be required to clearly mark and flag the entire course route, the start area, the finish, and each pit area (Special Conditions 7 and 8). To maintain adherence to the designated course, an average of at least 10 flags (surveyor tape markers) per mile will be required. Additional or specialized course markings will be required in locations along course that are fragile and highly susceptible to impact. The specific locations are included on the Supplemental Mitigation List and the required method of marking is discussed. The specific resources to be protected are identified on a separate document on file at the BLM Riverside District. This information is not included in this report to avoid inadvertently impacting resources, such as archaeological sites, by making the exact locations available to the public.

The Supplemental Mitigation List includes 36 locations, requiring specific marking and/or course marshals (see Section IV-C). The mitigation measures applied to most of these locations will provide protection to a variety of resources as well as eliminating hazards. Nine of the locations will alleviate impact to cultural resources. Specific mitigation of 21 locations will mitigate impact on vegetation and 15 will mitigate impact to wildlife values. Mitigation measures at 19 locations will reduce impacts to soils. Three of the locations provide protection to paleontological resources. Eleven locations were identified to alleviate hazards to riders.

Pickup crews and support vehicles will be allowed to enter the course route only from existing roads and must limit travel to marked course or existing roads and trails. No cross-country travel by pickup crews or support vehicles will be allowed (Special Condition 9).

3. Sanitation and Cleanup

Special Condition 11 requires the permittee to provide portable chemical toilets in the following locations and numbers:

Start Area	22 units
Finish Area	16 units
Razor Road Pit Area	10 units
Valley Wells Pit Area	6 units
Stateline Pit Area	6 units

Studies conducted by the California State Office of the BLM in 1973 indicated that 50 percent of the off-road vehicle users in the California Desert have a self-contained (includes sanitary facilities) camper, trailer, or motorhome.

With more than half of the overnight users having self-contained units, the addition of the above required chemical toilets will provide at least 1 unit for approximately every 300 people. This is in keeping with county and state health codes.

The permittee will be required to complete trash and litter cleanup of the start, pit, and finish areas within 8 days after the completed event and the remaining portions of the course within 15 days of the completed event (Special Condition 10).

Compliance to this stipulation will require that all trash and litter generated by the event at the start, pits, finish, along the course, and in the camping and spectator areas be cleaned up. If BLM personnel making the post-race compliance check do not find all areas mentioned above at least as free of trash and litter as they were prior to the event, the permittee will be required to return and complete the cleanup before the bond will be released.

Local Boy and Girl Scout Troops usually assist the permittee to comply with this stipulation. The cleanup usually begins at the start area as soon as the last wave of participants has left the starting line. The Scouts also move in and begin cleanup of the camping and spectator areas and the pits and finish areas as soon as activity there subsides.

The cleanup of the racecourse itself (including all course markers as well as trash and litter) is started by the "sweep crews" who cover the entire course immediately following the event to locate any injured or stranded riders. The remainder of the course cleanup is usually completed on the following weekend by club members, utilizing motorcycles and dune buggies for transportation.

No trash receptacles will be provided by either the permittee or the BLM. This action is in keeping with the historical behavior of participants and spectators in the Barstow-Las Vegas Race. Litter bags are used and are later picked up by the San Gabriel Valley Motorcycle Club.

4. First Aid and Communication

The sponsor will provide first aid, communications, and search and rescue personnel and equipment (Special Condition 12). This is effected through a volunteer organization called "Rescue 3" of Barstow, California. Rescue 3 is equipped with a radio base station, 11 mobile sets in 4 x 4 vehicles, and portable radios to carry on motorcycles. One 4 x 4 unit is a fully equipped ambulance. The radio base station is housed in a mobile field hospital. Several motorcycles with portable radios are used to "sweep" the course, locating injured contestants and disabled motorcycles. Eleven vehicles are stationed at points from the start to Baker, California, and two motorcycles follow the start. As the motorcycles report a course segment clear of injured contestants, the vehicle covering that station will move forward until stations are manned all the way to the finish. Radio calls to telephone access points are used to call in commercial ambulance service to the nearest pit area or hard surface road access point to pick up serious injuries. This allows the 4 x 4 units to stay in the field. All Rescue 3 personnel are intensively trained in field first aid.

5. Rider and Pit Crew Instructions

At the time of registration, each participant in the race is given a set of rider instructions and pit crew instructions. These instructions inform the participant of routes, regulations, safety procedures, and other necessary directives. Should the participants deviate from the prescribed course or otherwise violate regulations and procedures set forth by the sponsoring club and the Bureau of Land Management, the penalty is disqualification. Since it is prestigious to earn finisher identification from this event, the riders can be expected to comply with the club's instructions to avoid the penalty. These instructions are subject to BLM review (Special Condition 13).

6. Law Enforcement

The permittee will be required to contact the California Highway Patrol, the Nevada Highway Patrol, the San Bernardino County Sheriff, and the Clark County Sheriff when the permit is issued (Special Condition 14). In addition, the BLM also contacts these local law enforcement agencies. This contact serves to alert the respective agencies to the coming event and provides them lead time to plan duty schedules.

7. Vehicle Equipment Regulations

All motorcycles participating in the event must be equipped with proper brakes and a muffler that is in good working condition. No vehicle equipped with a muffler cutout, bypass, or similar device, or producing excessive noise, may be operated. This stipulation is included as Special Condition 15 and is required by 43 CFR 6295.3(a) and (b).

8. Fire Prevention

Although the probability of a fire being caused by this event or related actions is low, the permittee will be required to make every effort to prevent, report, control, and suppress any fire in the operating area (Special Condition 18). In addition, the BLM will make its fire caches at Fort Soda, Holloran Summit, and Mountain Pass available if necessary.

9. Private Land

To avoid unnecessary impact to private property, the permittee must submit a signed affidavit to the BLM assuring that all private landowners whose property is affected by the event have been contacted and given their permission or consent of use (Special Condition 17). In addition, course marshals and specific course markings will be required in designated locations (see Supplemental Mitigation List and accompanying map).

10. Race Entrants

The race entrants have been limited to 3,000 (Special Condition 19). This provides a ceiling which limits the number to the maximum amount of riders that the sponsor states their organization can handle.

SPECIAL CONDITIONS

(1) The permittee shall guarantee the faithful performance of all terms and conditions of this permit, including the payment of the recreation use fees required. The guarantee shall be secured by an undertaking signed by two qualified members of the sponsoring club, and will be in the amount of \$_____. In addition, a notarized affidavit of qualification will be signed by each person signing the undertaking and will be presented to the District Manager, Riverside District Office, Bureau of Land Management, along with the undertaking.

The undertaking shall remain in force as long as necessary to insure compliance with all terms and conditions of their permit.

(2) The permittee shall indemnify, defend, and hold harmless the United States and/or its agencies and representatives against and from any and all demands, claims, or liabilities of every nature whatsoever including but not limited to damages to property, injuries to or death of persons, arising directly or indirectly from or in any way connected with, the permittee's use and occupancy of the lands described in this permit or with the event authorized under this permit.

(3) The permittee is required to maintain comprehensive liability insurance covering its operations under the permit, insuring the United States in the following minimum amounts:

(a) \$100,000 for bodily injury to any one person and \$300,000 for any one occurrence.

(b) \$10,000 for property damage for any one occurrence.

(c) The insurer shall agree to give the United States 10 days' notice prior to cancellation or modification of such insurance.

(d) The permittee shall provide a copy of the actual insurance policy to the District Manager, who will forward it to the Regional Solicitor's Office for approval.

(4) The permittee agrees to take the responsibility for public safety and health during any phase of this event, including but not limited to those special conditions listed herein.

(5) The permittee will provide at least 100 course marshals to be placed at strategic locations in order to insure participant and spectator safety, resource protection, traffic and crowd control, and adherence to the marked course. Refer to the attached map and list of specific locations.

- (6) The permittee will provide a minimum of two course marshals at all public roads and railroad crossings to stop the race participants when crossing may be unsafe. At no time shall the course marshals allow the race to interfere with the normal flow of the public roadway traffic. Refer to the attached map and list for specific locations.
- (7) The entire course route will be clearly marked and flagged by the permittee under the supervision of the Bureau of Land Management. The course will be marked on an average of at least 10 flags per mile. Additional or specialized course markings will be carried out in areas of the course so identified by the Bureau of Land Management. Refer to the attached map and list of specific locations.
- (8) It shall be the responsibility of the permittee to confine participating vehicles to the marked course and to limit spectator and support vehicles to the marked and identified areas. Refer to the attached map and list of specific locations.
- (9) Pick-up crews or support vehicles must enter the course route only from existing roads and must limit travel to the marked course or existing roads and trails. No cross-country travel by pick-up crews or support vehicles will be allowed.
- (10) The permittee will be responsible for all trash and litter cleanup resultant from the event. The start, finish, and pit areas shall be cleaned up and the trash removed no later than 8 days after the race. All course markers, signs, flagging, and discarded motorcycle parts located along the course shall also be removed no later than 15 days after the race.
- (11) The permittee shall provide for a minimum of 10 chemical toilets at the first pit stop, 6 chemical toilets at the second pit stop, 6 chemical toilets at the third pit stop, 22 chemical toilets at the start, and 16 chemical toilets at the finish area. This requirement must meet the applicable state and local standards and guidelines.
- (12) The permittee shall obtain the services of a fully equipped and trained desert first aid and rescue organization. This organization shall provide for, but not be limited to:
 - (a) All necessary first aid, retrieval, and evacuation for any injured person at any point along the entire course.
 - (b) Two-way radio communications.
 - (c) The coordination of the removal of disabled vehicles and their riders from the course.
- (13) The permittee will distribute written instructions subject to BLM review or will hold a prerace briefing at the site to inform participants of routes, regulations, safety procedures, and other necessary directives. The permittee assumes responsibility for riders and pit crew compliance to event instructions.

- (14) The permittee shall contact the California Highway Patrol, Nevada Highway Patrol, San Bernardino County Sheriff, and Clark County Sheriff when the permit is issued.
- (15) All motorcycles participating in the race will be equipped with proper brakes and muffler in good working condition. No vehicle equipped with muffler cutout, bypass, or similar device, or producing excessive noise, may be operated.
- (16) The permittee shall make every effort to prevent, report, control, and suppress any fire in the operating area and will be held responsible for suppression and cost of fire caused on national resource lands through negligence of his participants.
- (17) The permittee must submit a signed affidavit assuring that all private landowners whose property is affected by the event have been contacted and given their permission or consent of use.
- (18) Any Government-owned structures, property, land, or resource harmed or damaged by the permittee, participants, or spectators associated with the permitted use shall be reconstructed, repaired, rehabilitated, and restored as may be required by BLM within 30 days after the event so that the condition thereof, in the judgement of BLM, is at least equal to the condition thereof immediately prior to such damage or destruction. Permittee further shall abate, as soon as possible, any condition existing which may cause harm or damage to any person, structure, property, land, wildlife, vegetation, and/or other resources.
- (19) Race entrants will be limited to 3,000 riders.
- (20) If the permittee does not attend the event himself, he will notify the District Manager of his substitute's name and planned headquarters for the event.
- (21) The permittee will, within 14 days after the event, complete the attached Post Event Data form and submit it to the District Manager, Riverside District Office, Bureau of Land Management, 1414 University Avenue, Riverside, California 92502.
- (22) The permittee must pay the United States a recreation use fee of 5 percent of gross receipts of the event (income from the operation of the event before deducting costs such as prizes, taxes, insurance, etc.; and to include income from participant and spectator fees, food and beverage concessions, etc.); or \$1.00 per rider, whichever is greater. This recreation use fee will be prorated on the percent of the course traversing public land.
- (23) If any affiliate not named on the SLUP application participates in sponsorship, management, or conduct of the event, the permit shall be null and void.

C. Site Specific Mitigation

The following list, the Supplemental Mitigation List, identifies specific locations within the area of the 1974 Barstow to Vegas Motorcycle Race and related activities, which because of potential environmental impacts will require special marking, flagging, course marshals, and/or protection. As part of the special conditions of the SLUP and under the supervision of the BLM, the permittee will be required to carry out these specific mitigation measures. An accompanying map shows the approximate location of each.

1. T. 11 N., R. 3 E., SBM, Sec. 24 and NE $\frac{1}{4}$ Sec. 25 (start)

To avoid injury to riders and spectators, the start area will be clearly marked with lime and flagging; no less than six course marshals will be required to line up racers and to keep spectators off the course.

2. T. 11 N., R. 3 E., SBM, Secs. 25 and 36; T. 11 N., R. 4 E., SBM, Secs. 19, 20, 29-32 incl.; T. 10 N., R. 3 E., SBM, Secs. 1 and 12; T. 10 N., R. 4 E., SBM, Secs. 5 and 6 (camping at start area)

Camping areas will be designated and marked to avoid extensive impact to resources. At least four course marshals will be necessary.

3. T. 11 N., R. 4 E., SBM, S $\frac{1}{2}$ Sec. 16, SW $\frac{1}{4}$ Sec. 17, S $\frac{1}{2}$ Sec. 20, and S $\frac{1}{2}$ Sec. 21 (ridge east of start area)

To avoid impact to the resources, the three dirt roads on the ridge will be blocked and posted as closed; at least one course marshal will be provided to keep joyriders off the ridge.

4. T. 11 N., R. 4 E., SBM, Sec. 17 (transmission line east of start)

To avoid the hazard of transmission line towers, to keep spectators off the course, and to moderate resource impact, special marking techniques will be worked out with the permittee. At least two course marshals will be required.

5. T. 12 N., R. 5 E., SBM, W $\frac{1}{2}$ E $\frac{1}{2}$ Sec. 28

To avoid impact to resources, the course segment will be routed $\frac{1}{4}$ mile north on existing graded road as designated by BLM personnel in the field.

6. T. 12 N., R. 5 E., SBM, SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 14

To moderate impact to resources, the course must be channelled to narrow the route to 20 feet through approximately a 1,000-foot area as identified in the field by BLM.

U.S.G.S. QUADRANGLES - 15' SERIES

1. - ALVORD MOUNTAIN, CA.
2. - CAVE MOUNTAIN, CA.
3. - SODA LAKE, CA.
4. - HALLORAN SPRING, CA.
5. - MESCAL RANGE, CA.
6. - CLARK MOUNTAIN, CA.
7. - ROACH LAKE, NEV.
8. - GOODSPRINGS, NEV.
9. - SLOAN, NEV.
10. - LAS VEGAS, NEV.

MAP FOR SUPPLEMENTAL MITIGATION LIST

- 4** AREAS REQUIRING SPECIAL ATTENTION
ALONG THE 1974 BARSTOW-VEGAS MC RACE

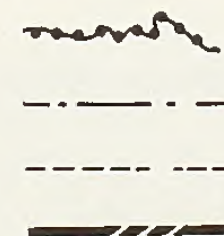
LEGEND

COURSE

TOWNSHIP AND RANGE LINES

RESERVATION BOUNDARY

15' QUADRANGLE MAP SERIES

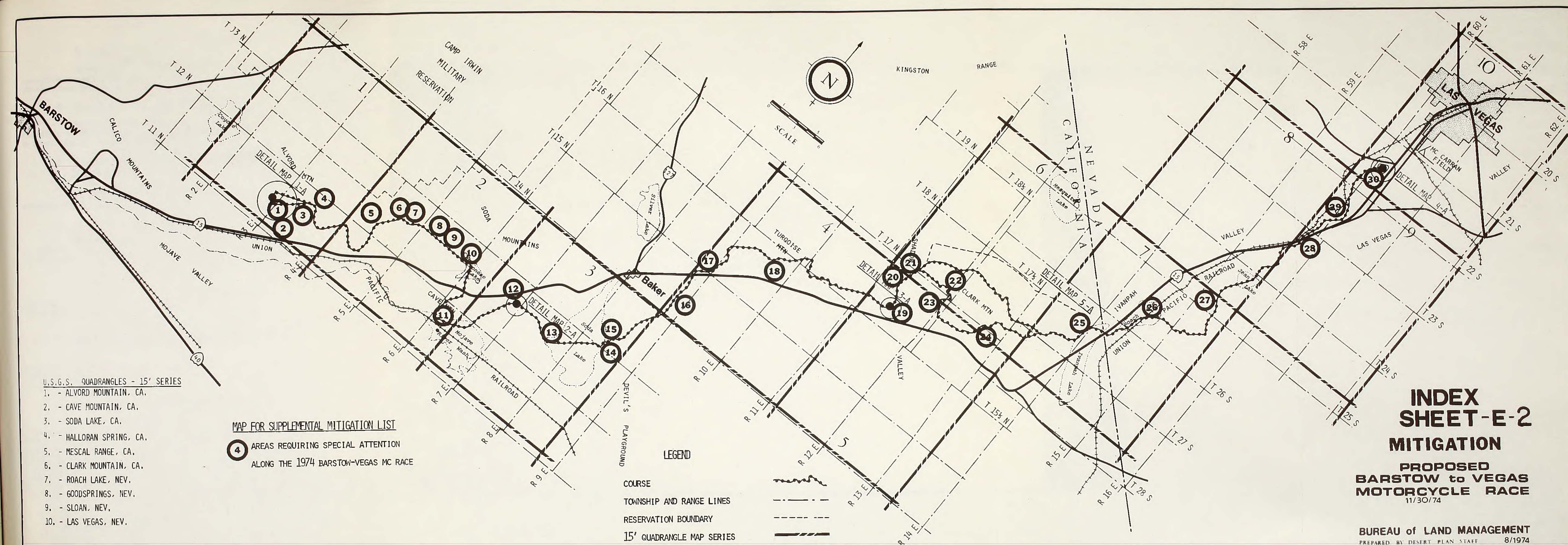


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7. T. 12 N., R. 5 E., SBM, SE $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 14

To moderate impact to resources, the course must be channelled to narrow the route to 20 feet wide through approximately a 500-foot-long area as identified in the field by BLM.

8. T. 12 N., R. 6 E., SBM, SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 8

To avoid impact to resources, the course route must be channelled to 20 feet wide through approximately a 500-foot-long area as identified in the field by BLM.

9. T. 12 N., R. 5 E., SBM, Secs. 13 and 14; T. 12 N., R. 6 E., SBM, Secs. 7-18 incl. (west of West Cronese Lake)

To avoid impact to resources, the course route must be marked to attempt to limit the course width to 100 feet.

10. T. 12 N., R. 5 E., SBM, SE $\frac{1}{4}$ Sec. 12 (Cat Mountain)

To avoid impact to resources, the course will be flagged and marked to channel riders to and over the north saddle; at least two course marshals will be required.

11. T. 11 N., R. 7 E., SBM, Sec. 7 (Mojave River Wash)

To avoid course cutting and impact to resources, special care will be taken to mark and flag the course well. At least two course marshals will be necessary.

12. T. 12 N., R. 7 E., SBM, E $\frac{1}{2}$ Sec. 14; T. 12 N., R. 8 E., SBM, NW $\frac{1}{4}$ Sec. 18 (Rasor Road Pit Stop)

The course in and out of the pit stop will be closely marked and flagged; pit crew and spectator areas will be identified and marked; at least four course marshals will be provided to keep spectators off the course.

13. T. 12 N., R. 8 E., SBM, Secs. 14 and 15 (SW Soda Lake)

To moderate impact to the resources, the permittee will be required to channel the course across the fan and through the mesquite dune as identified in the field by BLM. Lath and flagging will be necessary. Immediately out of the mesquite dune, the course will be marked and flagged to keep the course on the existing road to Soda Playa (less than 1/8 mile). The crossing of the old Tonopah and Tidewater Railroad will be well marked and flagged, and crossing will be limited to only one location, 15 feet wide. The permittee will provide at least two course marshals for this location.

14. T. 12 N., R. 9 E., SBM, N $\frac{1}{2}$ Sec. 4 (Soda Lake Corral)

To avoid course-cutting, the permittee will provide at least two course marshals and special care will be taken to mark course well.

15. T. 13 N., R. 9 E., SBM, E $\frac{1}{2}$ W $\frac{1}{2}$ Sec. 33 (E. Soda Lake)

To moderate impact to resources, course will be routed north via existing road and rejoined with proposed course where identified in the field by BLM.

16. T. 14 N., R. 9 E., SBM, Sec. 14 (Kelbaker Road Crossing)

To protect riders, the permittee will provide proper warning markers and two course marshals to function as flagmen.

17. T. 14 N., R. 9 E., SBM, N $\frac{1}{2}$ Sec. 11 (I-15 under-crossing)

To avoid course cutting, the permittee will take special care to flag and mark course well where it crosses under Interstate 15 and runs to the powerline road. At least two course marshals will be required.

18. T. 15 N., R. 10 E., SBM, S $\frac{1}{2}$ Sec. 2, Secs. 3-11 incl.; Secs. 18 and 19, N $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 30; T. 15 N., R. 9 E., Secs. 13 and 24 (S. Turquoise Mountain)

To avoid and/or moderate impact to resources, the course will be clearly marked and flagged in areas identified in the field by BLM. Use of existing roads may be required.

19. T. 16 N., R. 12 E., SBM, N $\frac{1}{2}$ Sec. 28 and S $\frac{1}{2}$ Sec. 21 (Valley Wells)

Pit area will be well marked and flagged. At least four course marshals will be provided.

20. T. 16 N., R. 12 E., SBM, N $\frac{1}{2}$ Sec. 21, W $\frac{1}{2}$ W $\frac{1}{2}$ Sec. 16, NE $\frac{1}{4}$ Sec. 17, E $\frac{1}{2}$ Sec. 8, W $\frac{1}{2}$ Sec. 4; T. 17 N., R. 12 E., SW $\frac{1}{4}$ Sec. 33 (Kingston Wash)

Course will be confined to the Kingston Wash bottom and will be flagged and marked to indicate this requirement.

21. T. 17 N., R. 12 E., SBM, Sec. 33 (Excelsior Mine Road)

To protect riders, the permittee will provide at least two course marshals on the west side of Excelsior Mine Road and east of Kingston Wash exit. The course will be closely marked and flagged. The course marshals will function as flagmen at the Excelsior Road Crossing.

22. T. 16 N., R. 12 E., SBM, Sec. 36; T. 17 N., R. 12½ E., Sec. 36; T. 17 N., R. 13 E., S½ Sec. 31 (Pachalka Spring)

To keep riders on the existing road, and to protect resources and private property, the permittee will take extra precaution to mark and flag the course. At least one course marshal will be provided to insure compliance and to limit access to the spring area.

23. T. 16 N., R. 12 E., SBM, S½ Sec. 1; T. 16 N., R. 12½ E., SBM, Sec. 1 (SW Clark Mountain)

To protect resources and to avoid course-cutting, the course will be closely marked and flagged. At least one course marshal will be provided.

24. T. 16 N., R. 13 E., SBM, Secs. 3 and 7-10 incl. (N. Mohawk Ridge)

To protect resources, this segment will be closely checked to assess feasibility of routing course on existing road. Course will be flagged and marked well and a course marshal will be provided.

25. T. 17 N., R. 15 E., SBM, N½ Sec. 18 and S½ Sec. 7 (Stateline Pit Stop)

Pit area will be marked and flagged. At least four course marshals will be provided.

26. T. 27 S., R. 15 E., MDM, E½ Sec. 4 (Roach Lake Railroad Crossing)

Course will cross railroad right-of-way at existing crossing in section 4. Two course marshals will be provided to function as flagmen.

27. T. 25 S., R. 60 E., MDM, S½ Sec. 22 and Sec. 28 (S. Jean Lake)

Permittee will provide at least one course marshal and closely mark and flag the course.

28. T. 24 S., R. 60 E., MDM, Sec. 15 (Frontage Road Crossing)

The permittee will provide warning markers and two course marshals to function as flagmen.

29. T. 23 S., R. 60 E., MDM, Sec. 9 (County Road Crossing)

The permittee will provide warning markers and two course marshals to function as flagmen.

30. T. 22 S., R. 61 E., MDM, Sec. 19 (Finish)

The finish area will be marked and flagged. Spectator, pit, and camping areas will be designated. At least six course marshals will be provided.

The spectator parking access dirt routes will be watered an hour before and during the arrival of spectators and as necessary to keep the soil moist. Water will be applied at the rate of 2,000 gallons per acre or more as determined by the Bureau of Land Management to keep the area free of dust during the period of occupation by spectators.

As a result of consideration of comments received to the Draft Environmental Impact Statement, the following mitigation measures are added. Time limitations involved in printing has precluded showing these locations on the map.

20A. T. 16 N., R. 12 E., SBM, Secs. 7, 8, 17, 20, 21, and 28
(Kingston Wash North)

If this route is selected, course will be confined to the Kingston Wash bottom and will be flagged and marked to indicate this requirement.

21A. T. 17 N., R. 12 E., SBM, N $\frac{1}{2}$ N $\frac{1}{2}$ Sec. 8 (Excelsior Mine Road North)

To protect riders, the permittee will provide proper warning markers and two course marshals to function as flagmen.

31. T. 11 N., R. 4 E., SBM, Secs. 6 and 7 (Spanish Canyon)

To avoid impact to resources, the canyon areas to the north of the start will be closed to vehicular traffic during the duration of the event.

32. T. 15 N., R. 10 E., SBM, S $\frac{1}{2}$ Sec. 2 (Holloran Spring Road Crossing)

To protect riders, the permittee will provide proper warning markers and two course marshals to function as flagmen.

33. T. 15 N., R. 10 E., SBM, E $\frac{1}{2}$ Sec. 2, NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 1;
T. 16 N., R. 10 E., SBM, SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 35, Sec. 36
(Bull Spring Wash)

Route course along existing route as designated in the field by Bureau of Land Management.

34. T. 16 N., R. 11 E., SBM, SE $\frac{1}{4}$ Sec. 33 (Pomona Mine area)

To protect resources and to avoid course cutting, course will be flagged and marked well and one course marshal provided.

35. T. 17½ N., R. 13 E., SBM, Sec. 19 (Mesquite Pass)

To avoid course cutting and impact to resources if this route is selected, the course will be closely marked and flagged. At least two course marshals will be required.

36. T. 26 S., R. 60 E., MDM, Sec. 9 (Sheep Mountain South)

To avoid course cutting and to reduce impact to resources, special care will be taken to mark and flag course well. A course marshal will be provided.

V. ADVERSE IMPACTS THAT CANNOT BE AVOIDED SHOULD THE PROPOSAL BE IMPLEMENTED

A. Introduction

A general discussion of significant, unavoidable, adverse impacts follows. These are summarized in a general way. The unavoidable impacts cited here are those that will occur despite mitigations proposed in this report.

Parameters which constrain the scope of mitigations include the following:

- (1) The limited manpower resources of the Bureau of Land Management.
- (2) Funds available to the Bureau of Land Management and to the Racing Club, to implement certain mitigation measures.
- (3) The nature of the race itself, a "thrill" event, pitting man against environment, with concomitant threats to human safety and environmental damage.
- (4) The time required to effect certain mitigation measures prior to the race.

Identified adverse impacts are both physical and attitudinal, that is, tangible and intangible. The tangible factors, e.g., soil, plants, wildlife, are readily measured and quantified. The intangible factors or values, e.g., those relating to aesthetics and recreation, though not easily quantified, are no less important. A discussion of these tangible and intangible elements follows.

B. Water

The proposed race will have no direct impact on water supplies since the course is not charted through or near existing surface water sources.

An indirect impact will be that of adding turbidity to existing occasional overland flows where cycle tracks have concentrated runoff on the fine-textured soils. These occasional overland flows most likely would occur during late winter or early spring. The impact of concentrated overland flow and increased velocity will be most apparent on staging and camping areas. At individual locations (e.g., the channels adjacent to the playas) along the course similar compaction, concentration, and velocity increase will be caused by vehicles dropping abruptly into dry washes from fine-textured soil terraces or benches.

C. Soils

Surface conditions of soils will be disrupted by the tracks of numerous motorcycles. Generally, fine-textured soils will be compacted

more than coarse textured soils. Situations will be created which promote erosion, especially on slopes where channeling, caused by flash floods, can be expected. Where trails cross washes, banks will be broken down, thus causing erosion potential with subsequent down-wash sedimentation. General soil disruption will be attended by secondary adverse impacts upon dependent plants and animals.

Area-wide trail and staging sites impacts would include the loss of the soil, creating dust problems downwind of the race area. Further, if the course is wet, an indeterminate amount of additional compaction could occur. Effects of soil compaction on vegetation and wildlife productivity is described in Section V-B.

Motorcycle tracks and ruts across 692 acres of wet playas would be expected to be visible for 30 or more years. Wheel tracks made in the early 1930's in Soda Lake are visible today. But predicting whether the playa would be wet on the day of the race is difficult. One year in seven the rainfall during November exceeds 1.3 inches.

Six areas of specific soil impact will occur.

1. The Staging Area

This lies all on Ma soil association with a high susceptibility to compactions. The impact in this area will be to break up the crust which acts as a protective cover and change the soil surface texture, leaving it susceptible to wind erosion. The staging area encompasses an estimated 810 acres, of which previous events have disturbed approximately 730. This event is expected to disturb an additional 16 acres of soil surface within the 180-acre staging area.

2. Razor Road Gas Stop

The impact is as discussed for the staging area. The area of influence at this stop is 110 acres, of which 100 acres are previously disturbed. This race will impact an additional 2 acres of Ac soil association with a moderate susceptibility to compaction.

3. Valley Wells Gas Stop

The impact is as discussed for the staging area. This acreage lies on an Ac soil association with a moderate susceptibility to compaction. This lies on a flatter, less sandy surface than the Razor Road stop. Therefore, the area of influence is larger, because people tend to spread out more, encompassing approximately 600 acres. Of the 600 acres, an estimated 540 acres have been previously disturbed. This event is expected to impact an additional 12 acres of soil surface within the area of influence.

4. Stateline Gas Stop

The impact is as discussed for the staging area. This stop area encompasses approximately 80 acres. Of the 80 acres, an estimated 70 acres have been previously disturbed. This event is expected to impact an additional 2 acres of soil surface within the area of influence. The 2 acres lie on an Rp soil association with a high susceptibility to compaction when wet.

5. The Finish Area

The impact is as discussed for the staging area. The area of influence around the finish encompasses an estimated 640 acres, of which approximately 575 acres have been previously disturbed. The event is expected to impact an additional 13 acres within the area of influence. The 13 acres lie on the Ac soil association and have a moderate susceptibility to compaction.

6. The Racecourse

The racecourse has an area of influence encompassing an estimated 5,265 acres, of which an estimated 2,015 acres have been previously disturbed. This event is expected to impact an additional 433 acres within the area of influence. The estimated distribution of that acres lies across several soil associations as follows:

- Ac - 50 acres - Moderate susceptibility to compaction
- Ad - 150 acres - Moderate susceptibility to compaction
- Cj - 8 acres - Low susceptibility to compaction
- Gr - 10 acres - Low susceptibility to compaction
- Ma - 60 acres - High susceptibility to compaction
- Rp - 155 acres - High susceptibility when wet
Moderate susceptibility when dry

Along the racecourse, compaction is more significant than in the previously discussed areas because of the multiple motor-cycles traversing the same trail segments.

Table V

Estimated Impacts - Soil Associations

<u>Impacted Area</u>	<u>Soil Assn.</u>	<u>Acres in Area of Influence</u>	<u>% & Acres Not Previously Impacted</u>	<u>Expected Additional Disturbance % & Acreage</u>
Racecourse	Ac	590	<u>1/</u> 40% - 240	<u>3/</u> 20% - 50
Racecourse	Ad	1831	40% - 735	20% - 150
Racecourse	Cj	90	40% - 36	20% - 8
Racecourse	Gr	110	40% - 43	20% - 10
Racecourse	Ma	700	40% - 280	20% - 60
Racecourse	Rp	1944	40% - 775	20% - 155
Racecourse	Subtotal	5265	-----	433
Staging Area	Ma	810	<u>2/</u> 10% - 81	20% - 16
Razor Stop	Ac	110	10% - 11	20% - 2
Valley Wells Stop	Ac	600	10% - 60	20% - 12
Stateline Stop	Rp	80	10% - 8	20% - 2
Finish Area	Ac	640	10% - 64	20% - 13
Totals	--	7505	-----	478

1/ The estimated degree of existing damage on the racecourse area of influence ranges from 20% through 100%. Therefore, for purposes of estimation, 40%, the mid-point in the range of undisturbed soil surface, was used.

2/ The estimated degree of existing damage on the staging, pit, and camp areas ranged from 80% to 100%. Therefore, for purposes of estimation, the mid-point in the range of undisturbed soil surface, 10% was used to estimate acres not previously disturbed.

3/ To estimate the expected additional disturbance, field estimations of additional impact ranged from 0-5% through 0-30% with the majority lying in the 0-20% range. Therefore, the top of that range is used.

D. Air

1. Gaseous Contaminants

The race will result in temporary increase in the level of oxidants and carbon monoxide near the start, pit, and finish areas and along the course. Overall increase of gaseous matter within the air basins will be insignificant.

2. Particulate Matter

As a result of vesticular crust destruction, certain soils, such as the Ma and Rp soil associations, will be more susceptible to wind erosion. Loss or displacement of soil and the slow, natural regenerative

process of damaged or destroyed vegetation in the desert climate will result in permanently altered and accelerated topographic contour, see Table V for approximate acres impacted.

Dust and blow sand conditions will be created along certain segments of the course, particularly the Ma and Rp areas. The Federal, California, and Nevada air quality standards for airborne particulate matter for a 24-hour period will be exceeded. Based on Nevada Bureau of Environmental Health formulae the 590 tons of particulate matter will be generated by the race (see III-4-b). The impact on the air at I-15 freeway crossings could be temporarily significant. It could distract motorists' attention from their driving. It might be extreme enough under heavy wind to dangerously restrict motorists' vision.

Table III-C-1 indicates wind direction and force, soil conditions, and probable level of impact, i.e., high, medium, and low dust and blow sand potentials created by the race. Summary Table II-2-1 shows that about 70% of the course has moderate or more severe wind erosion potential. The individual segments where impact will occur are itemized on Table III-C-1.

E. Noise

1. Race Course

The noise level generated by the motorcycles as they collectively traverse the race course will briefly but intensely disturb the solitude of the natural environment through which they pass. At any point along the race course, the noise will increase from almost total silence to very loud noise levels then decrease to almost total silence with solitude again restored except immediately adjacent to freeways. Where the race course crosses Interstate 15, motorists may be disturbed, startled, and/or intrigued. The possibility exists that the unalert and/or curious motorist may cause or be involved in an auto accident.

The noise level generated by a single motorcycle is approximately 10,000,000 times greater than that experienced by a person in a quiet suburban residential area (see Table II-A-4).

2. Start Area

The existing quietude within the start area will be impacted for several hours during preparation for the race with moderate to loud noise levels as well as intermittent spurts of noise within the deafening range. In relative terms, the magnitude of these noise levels is between 1,000 to 10,000,000 times greater than that experienced by a person in a quiet suburban residential neighborhood. When the race begins, noise levels will reach deafening proportions for a short time then abruptly subside to moderate noise levels.

3. Pit Areas

The relative quiet at the designated pit area will be impacted with noise levels approximating loud to deafening proportions intermittently but continuously for the duration of the race.

4. Spectator and Camping Areas

The majority of spectators and campers will tend to congregate at the start area.

This congregation of people and motorized equipment will produce the most continuous and at times the most intense noise impact in the five areas discussed.

5. Finish Area

The impact of noise at the finish area is estimated to be quite similar to that of the pit areas; intermittent but continuous loud to deafening noise for several hours duration. In addition, the gathering of spectators and motorized equipment has been considered in this estimate.

F. Living Components

The proposed mitigation will not significantly reduce the impacts of this action on the living components of the environment. Those impacts, discussed in Part III, are summarized here. Table III-B-1, Impacts on Wildlife Habitat, summarizes the acreages impacted for each habitat type.

There are 7,500 acres of desert affected by the race and race related activities. About 2,240 acres occur in staging, pits, and finish areas; the rest is on roads, trails, and in washes. Habitat losses in pits to date cover 2,000 acres; on roads, trails, and washes losses are estimated at 2,675 acres. An additional loss of 478 acres may occur to remaining habitats from the proposed event. To losses of habitat on the 7,500 acres are about 75%.

1. Impacts on Vegetation

The following impacts will occur: reduction in total number of perennial shrubs; reduction in diversity of perennial shrub species; reduction in numbers of annual wildflowers that will germinate and flower in the years following the race; reduction in diversity of annual wildflowers; and increased growth of non-native weedy species.

Up to 20% of remaining vegetation existing on the race course and in the pits may be destroyed by this race.

Compaction of soil reduces the availability of water for seed germination and growth of plants. There are approximately 3,500 acres of soils with high potential for compaction and 2,700 acres with moderate potential for compaction. Reduced potential for germination and plant growth will slow the rate of revegetation and prolong the period required to reestablish native vegetation.

Recovery of Vegetation: The initial revegetation of disturbed areas will be by exotic species such as filaree, checker fiddleneck, schismus, jimson weed, annual burweed, and Russian thistle. Time required for recovery of the natural vegetation varies considerably depending on soil type and vegetative species involved. Estimates range from 1 to 10 years or more for annuals, for as much as decades for perennials, and for perhaps centuries for return of climax communities. Some areas may never recover. Where exotic species invade the disturbed areas, the climax communities may never return.

2. Impacts on Wildlife

General impacts on wildlife can be categorized by losses to habitat, losses to animal populations, and noise.

Losses to Wildlife Habitat. The most important habitat component impacted is the vegetation, the basic source of nutrients. Reduction of vegetation sets off a series of related events which are complex but predictable. These are:

- a. Reduction in plant nutrients available for transfer to consumer species.
- b. Reduction in herbivores (includes herbivorous insects, reptiles, birds, and mammals).
- c. Reduction in insectivores (includes insectivorous insects, reptiles, birds, and mammals).
- d. Reduction in carnivores dependent on insectivores, herbivores, and other carnivores.
- e. Decrease in stability of communities through loss of populations and loss of species.

Other habitat component losses related to vegetation are:

- a. Reduced cover used for protection from extremes of weather.
- b. Reduced cover used as protection from predators.
- c. Reduced number of sites available for placement of nests and burrows.

To date, 4,675 acres of wildlife habitat have been lost from the Barstow-Las Vegas race. An additional loss of 478 acres is anticipated from this event.

Losses to Animal Populations. The indirect losses of animals are related to the loss of habitat and resulting decrease in productivity. These losses occur from increased susceptibility to predation, increased exposure to extreme weather conditions, starvation, and reduced nest sites.

Direct mortality from motorcycles will also occur at the time of the race. There are 9 species of lizards, 17 of snakes, the desert tortoise, and 19 species of small mammals that are underground but close to the surface. Those animals directly under the course will be crushed. Several of these species are considered significant; i.e., the fully protected desert tortoise and gila monster. They also include the desert iguana, banded gecko, leopard lizard, Mojave fringe-toed lizard, desert horned lizard, and rosy boa which are partially protected because of diminishing populations. The chisel-toothed kangaroo rat is significant because it has restricted habitat and is uncommon.

A few species may temporarily increase in areas of slight soil and vegetation disturbance. These are: side-blotched lizard, zebra-tailed lizard, deer mouse, Merriam kangaroo rat, and horned lark. None of these are significant species.

The general result of these impacts will be a decrease in total numbers of animals, decrease in total biomass, and decreased species diversity.

Noise. Noise and disturbance will cause many species to leave the racecourse and race associated areas. These animals will be under stress and many will be lost because of increased susceptibility to predation and starvation.

Some of the mammals will suffer a permanent loss of hearing sensitivity. This will make the affected animals more vulnerable to predation. Additional mortality can occur during the race when danger and distress signals are masked by the noise of the motorcycles.

Recovery of Wildlife Populations. The short-lived species with high reproductive potential will recover whenever the habitat is restored to a suitable quality. The long-lived species with low reproductive potential such as the desert tortoise, chuckwalla, desert iguana, gila monster, raven, prairie falcon, and Nelson bighorn sheep may take years to restore reduced population levels.

Recovery of populations is dependent on recovery of habitat. Habitat recovery will not occur if there is continued use on the race course.

3. Specific Wildlife Habitats

Alkali Sink-Lake Edge. About 90 acres of this type of habitat have been and will be adversely affected by the race. Eighty acres are devoted to pit and 9 to roads, trails, and washes. There has been approximately 80 to 100% habitat loss in the pit areas and 50% on roads, trails, and washes. An additional 30% of what is left may be lost with the proposed race. Potential for compaction is high when soils are moist, moderate when dry (Table III-B-1). Recovery of vegetation is likely to be slow.

Significant species receiving moderate to high impacts are desert horned lizard, kingsnake, desert night snake, and the Utah black-headed snake. All of these are found throughout the desert in many habitats. Potentially, the most important species is the chisel-toothed kangaroo rat, which has limited habitat preferences (Table III-B-2).

Pit areas, where habitat losses approach 80 to 100%, support few species of animals. Populations are probably 5 to 20% of those in undisturbed habitat. On trails and washes, losses are less, perhaps 50%. In these areas, wildlife populations will receive up to 30% additional damage from the proposed event.

Alkali Sink with Mesquite. There are 639 acres of this habitat affected, the majority of which is on trails. Thirty-five percent of the trail habitat has been destroyed. Trail areas may lose an additional 15% of habitat. The compactability of soils ranges from moderate to high (when moist), and thus recovery of vegetation will be slow.

There are several significant species that will receive additional moderate to high impacts (Table III-B-2). Currently, with 35% of the habitat lost, wildlife populations can be expected to have declined about 30-40%, a similar amount. Remaining wildlife populations may decline 15% from the proposed action. One of the more important species affected is the Mojave fringe-toed lizard.

The mesquite represents important habitat for the verdin and black-tailed gnatcatcher (feeding, nest, cover), and provides cover for gambel's quail, the mourning dove, and the cottontail rabbit.

Wash: Desert Willow. There are 118 acres affected of which 6 are on roads. The remainder is in wash, where habitat losses to date are estimated at 35%. Washes may receive an additional 15% loss of habitat with the proposed race.

There are several significant species that may receive moderate to high impacts (Table III-B-2). The most important is the Mojave fringe-toed lizard, which is limited to distribution to windblown sands of the Mojave Desert.

Wash: Acacia and Black-banded Rabbitbrush. Only 18 acres are affected in this habitat. Off-road vehicle impacts have produced up to 25% habitat loss to date and may result in an additional 10% loss. Soils here have moderate potential for compaction (Table III-B-1).

Wildlife populations have lost about 25% of the habitat and may experience an additional 10% loss along the trail. There are several significant species that may receive moderate to high impacts (Table III-B-2). The wash offers excellent cover for such game birds as gambel's quail and mourning dove, and for such predators as the kit fox, coyote, and badger.

Wash: Cheesebush Low Elevation. Low elevation cheesebush covers about 47 acres; 25 to 30% of this habitat has been lost. An additional loss of 20% is expected with the proposed event. Approximately 50% of the soils here have low potential for compaction and 50% have moderate potential. Recovery of soils and vegetation may be more rapid in areas with low potential for compaction than in other parts of the course.

Wildlife habitat and populations already have been reduced by 25 to 30%. The significant species with moderate to high potential for past and future race impacts are all reptiles. One, the desert tortoise, is fully protected; the rest are partially protected by Fish and Game Codes (desert iguana, kingsnake, leopard lizard, desert horned lizard, and rosy boa).

Creosote Bush Communities. Creosote Bush Communities, which represent one of the most widespread vegetative types in the California Desert, have a total of 3,643 acres impacted by the Barstow-Vegas event. Of the total, 920 acres are in pits and have received as much as 80 to 100% habitat loss. The rest - roads, trails, and washes - has had 30 to 100% habitat loss in the past and may receive up to 20% additional loss from the proposed action. Soils vary in potential for compaction from low to high; therefore, time for recovery of habitat and revegetation will vary considerably (Table III-B-1).

Wildlife population and habitat losses vary from 80 to 100% in pits to 30% on some trails and washes. Again, most of the significant species which will receive additional heavy impact are the reptiles. One, the desert tortoise, is fully protected by State law. Several others are partially protected by State laws: desert iguana, desert horned lizard, leopard lizard, banded gecko, kingsnake, and Mojave fringe-toed lizard. Two others are uncommon to rare: lyre snake and Utah black-headed snake. With the exception of the tortoise and Mojave fringe-toed lizard, all are fairly widespread in the desert.

Joshua Tree or Mojave Yucca and Creosote Communities. There are 1,278 acres affected in this habitat type. Of these, 1,240 are in pit areas and have received losses of 80 to 100% to the habitat. An additional 38.7 acres are on trails, washes, and roads and have received impacts

causing 30 to 50% loss of habitat to date. There may be an increased 20% habitat loss from the proposed race. Soils of this habitat are low to moderate in potential for compaction.

Joshua Tree or Mojave Yucca and Creosote Communities have many of the same reptiles as the Creosote Communities. The species with the greatest potential for population loss is the desert tortoise. Moderate to high densities of tortoises occur in this community. The potential for recovery of tortoise populations from the race and race-related activities is low. In addition to the reptiles, such birds as the bendire thrasher and burrowing owl may be affected. Numbers of these birds are low and slight changes in the habitat may be disruptive.

The Clark Mountain Area. The Clark Mountain area has a number of different habitat types that occur on one segment of the racecourse. These include the Desert Almond Wash, high elevation Cheese Bush Washes, the Joshua Tree-Mojave Yucca-Cactus Community, Blackbrush Community, Pinyon-Juniper Woodland, and Pachalka Springs. Most of these habitats support large numbers of animal species, a diverse flora and many rare wildflowers.

The lower and western slopes of Clark Mountain have a rich cactus garden, perhaps unequalled in the California Desert. The course borders the edge of the Clark Mountain closed area for about 3 miles. The Clark Mountain closed area is predominantly Pinyon-Juniper Woodland type. In addition, there are the Pachalka Springs or Gardens, which lie a few hundred yards off the racecourse, but have the potential for receiving impacts from motorcyclists who stop to rest, must be picked up because of breakdown, and from spectators, etc.

The habitats affected total 58.6 acres on about 23 miles of the course. A large portion, 13.5 miles, lies on existing roads, but another segment of 9.5 miles traverses washes and trails. Soils vary in compactability from low to moderate.

The 20 to 25% loss of habitat that has already occurred on the trails and washes (high elevation Cheesebush and Desert Almond Wash) is minimal compared to other parts of the course; this is because the race has gone over this route only once or twice previously instead of 7 times. An additional 25% habitat loss can be expected from the proposed event.

Washes and trails in the Clark Mountain area have 11 rare and 26 locally rare wildflowers, and other 23 expected rare plants. Some are: Utah Mortonia, Heermann's buckwheat, lime penstemon, Stephen's penstemon, Aven Nelson's phacelia, Fendler ground cherry, Alverson's cactus, and many others. There are more rare plant species concentrated in this area than in most parts of the California Desert. Several were noted along the course in washes and could receive impact from the event.

The numbers of significant species of wildlife are also high. In the washes there is a gila monster, a very rare species in California and fully protected by law.

The proposed race route may cover a significant portion of its limited habitat in California. There are about 8 miles of potentially prime habitat in washes that are traversed by the course. Without mitigation, further use of these washes for the race would substantially damage (additional 20%) the habitat.

There are other significant reptiles in the washes and on trails - banded gecko, leopard lizard, desert horned lizard, kingsnake, rosy boa - all partially protected by Fish and Game codes. Species uncommon to rare are the lyre snake, desert night snake, Utah black-headed snake, and ringneck snake. The ringneck snake is another species highly restricted in distribution in the desert.

There are many significant species of birds, and it is difficult to determine which might receive moderate to high impacts from the event. Some are listed in Table II-B-2; all are listed in Table II-B-6. The habitat in the Pinyon-Juniper Woodland and Pachalka Springs supports an unusually diverse avifauna. In general, the birds already low in numbers and with limited habitats will be the more likely to suffer. Some are the Cassin kingbird, crissal thrasher, blue-gray gnatcatcher, Wright flycatcher, Virginia warbler, Bell's vireo, and gray vireo.

Several mammals may also be affected. Of these, the Nelson bighorn is probably the most susceptible to habitat disturbance, noise, and race activity. The population numbers are low and habitat is limited.

Although the acreage involved in the Clark Mountain area is low, and over 50% of the course covers existing roads, the potential for significant habitat damage and disturbance to wildlife is high. Cumulative effects from repeated use, either from organized off-road events or from casual use, will be significant, especially to those species, whether plant or animal, with limited numbers and geographic range.

Crucifixion Thorn. The playa with Crucifixion Thorn covers only a mile or less of the course and .25 acre. The soils here are moderate in compaction potential if dry and high if moist. Impacts to this community would primarily occur to the playa surface itself, because the thorny trees would be avoided by most motorcyclists. Without mitigation, there is a 0-5% potential for damage to the habitat.

4. Summary of Impacts (Soil, Vegetation, Wildlife)

There are approximately 7,500 acres of wildlife habitat that have been impacted in the past and will receive additional damage from the proposed event. About 2,240 acres of habitat are in pits and have received extensive and intensive habitat losses ranging from 80 to 100% (about 2,000 acres of habitat lost). The rest of the acreage occurs on roads, trails, and washes; habitat losses are estimated at

about 2,675 acres. An additional loss of 478 acres is anticipated from the proposed event.

Potential for recovery from damage to soils, vegetation, topography, and loss of animal populations varies considerably. Estimated time for recovery varies from one year to decades to centuries, if ever. Ability for the habitat to recover depends on the potential for soils for compaction. Approximately 3,500 acres (about half of the impacted acreage) have high potential for compaction, 2,770 have moderate potential for compaction, and about 200 have low potential for compaction. Because most of the soils affected are in the moderate to high categories, the time for recovery - if the areas are not used again - could be extensive.

Many species of reptiles, birds, and mammals will sustain losses to populations and losses to habitats from the event. There are 77 significant species that will be affected. Although some of these are widespread in the desert, populations have been diminishing. Additional losses to most from the event may not be significant to the population as a whole; however, the ultimate effect will be to further decrease habitats and populations.

Although not noted under the discussion of individual habitat types, significant mammals such as kit fox, bobcat, coyote, badger, weasel, and mountain lion will sustain some losses to their overall populations. With the decrease in food supply (due to losses of small prey animals such as rodents, lizards, and snakes), and the loss of habitat for the prey animals, there will be a corresponding decrease in the predators.

There is only one species of animal, the gila monster, that is expected to sustain severe and perhaps serious disturbance to its habitat.

G. Human Interest

1. General

Large concentrations of spectators and race support personnel will congregate as previously described at the race start, pit areas, and race finish. Traffic and human congestion will occur despite efforts to minimize these problems. Ten to twelve thousand spectators in addition to 3,000 racers are expected at the starting area. Many of these spectators will themselves be riding motorcycles about the general vicinity of the start. An anticipated 6,000 casual ORV riders are expected to be "joy riding" within a radius of three miles of the start area. While this general area is already severely impacted by past use, additional destruction to vegetation and soils is expected. Similar "joy riding" is expected by lesser numbers of spectators at the other concentration areas mentioned, viz., 500 riders at each of the three pit stops, and 2,000 at the finish area.

Despite normal precautionary measures, as well as the mitigations in this proposed action, a threat to the safety of the racers will exist. In the 1973 Barstow-Las Vegas race, 47 injuries resulted from the race, ranging from a severe stomach ache to a death. Serious lacerations, contusions, and bone fractures were common injuries. A similar number of injuries may occur in the proposed 1974 race, and the very real possibility of death must be reckoned with. This danger is generally understood, and is regarded as an inherent element of the competition.

2. Aesthetics

Much of the aesthetic description along the race route has been created by previous races. Additional ORV activity in the proposed 1974 race will create more aesthetic impact. There will also be an additional impact of unknown severity which will be caused by an estimated 6,000 casual riders at the race start, pit areas, and finish.

Finally, the natural regenerative processes which would naturally, though very slowly, act to wipe out already extant aesthetic impact signs will be set back in time by reuse of the racecourse.

3. Recreation

Adverse impacts upon recreational and cultural values are unavoidable and are in many cases very difficult to quantify. As previously mentioned, little specific data is available as to exact numbers of recreationists of various types who use the desert along the proposed race route. However, a general knowledge of these types of users in other desert situations provides a sufficient understanding of their qualitative characteristics, needs, and desires to permit the summary generalizations which follow.

4. Lost Opportunities

These include those options lost to outdoor recreationists whose activities are in direct conflict with the ORV racer. Certain outdoor recreational activities have "built-in" incompatibilities in terms of sharing the same time and space -- hunting and bird-watching, for example. In general, those activities which are contemplative, passive, and artistically or aesthetically oriented tend to yield in competitive situations to those which are more active, aggressive, and consumptive. Thus, the race with all its commotion will reduce recreational occasions for those other types of desert users for a short period of time, 1 to 2 days.

Lost opportunities must be faced by those seeking solitude, quiet, natural historical, and wilderness experiences within the impact zone of the race.

5. Recreation Experience Impairment

Those recreationists who undertake their activities despite the intrinsic conflict with the race itself, will experience a diminution of their own recreation activity satisfaction. A person may persist, for example, in viewing and photographing plants at Pachalka Gardens, but not without accompanying dissatisfaction, as a result of racers coming through and interrupting his solitude. This number of people is unknown but is likely to be few.

6. Existence Factor Conflict

Basically, "existence factor" is that degree of satisfaction that many individuals derive from the knowledge that a given resource or feature exists and is maintained in an untrammelled state (Tombaugh, 1971). The widespread public interest in whales, the animals of East Africa, national parks and wilderness areas, which many people never really expect to see firsthand, is evidence of the importance of "existence factor". It may well be the most significant human value impact of the proposed race. The intensity of the feeling of Californians regarding the preservation of natural amenities has been dramatically evidenced recently by the public outcry on offshore oil drilling in Southern California. An assessment of the attitudes and interest of the people of California (other than special interest and user groups) toward ORV use of the California Desert has never been made.

7. Adverse Precedents

This race will support the emerging idea that the Barstow-Las Vegas Race is an "annual" or "traditional" event. Once an event takes on the status of a traditional event, it becomes more difficult to control or restrain because of the social, political, and economic forces which promote it. The Barstow Chamber of Commerce, backed by local businessmen, welcomes the 12,000 - 15,000 people who visit Barstow during the event. However, perhaps an equal or larger number of citizens, diffuse in location and voice, are offended by the race and its environmental and recreational impacts, which have been thoroughly described elsewhere in this report. In short, the combination of vested interests, precedents, and traditions may serve to perpetuate certain events which may be environmentally impacting.

8. Cultural

Some archaeological and historical data will probably be destroyed. BV-2, BV-3, and BV-4 are the only archaeological sites recorded east of the start and west of West Cronese Lake. They contain much valuable scientific data, even in their present state of deterioration. Their integrity is not complete enough to qualify them

for nomination to the National Register of Historic Places, but valuable information is still contained as to the prehistoric activities occurring there. The proposed action may cause additional loss of archaeological data at these sites. The contextual relationships of artifacts will be disturbed if motorcycles pass over them.

VI. RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The Barstow-Las Vegas Motorcycle Race lasts one day, but its impacts extend over a long-term period. It involves approximately 13 thousand people and support services. Participants and spectators are benefited for many months in anticipation and preparation for the event. For at least an equal time afterward they will enjoy recollection. The consequences upon environmental productivity are more complex.

The race will have a long-term effect on soils caused by surface disturbance, such as compaction, and erosion. Regeneration and soil conditions will range from one year (in cases of mildly broken soil crusts in peripheral areas along existing roads and trails) to unknown decades (in severely compacted and erodible soils on previously and heavily used roads and trails).

There are multiple long-term effects that reduce the productivity of the living components of the environment. Reduction in productivity occurs through loss of and disturbance to soils and from damage and destruction of annual and perennial vegetation. Losses of vegetation and soils constitute losses to wildlife habitat. With loss of habitat, major changes in abundance and composition of animal species in the biotic communities are expected to occur. When numbers of animals, diversity of species, and biomass are reduced, plant and animal communities are simplified and stability is reduced. Productivity is lowered.

Recovery of wildlife populations is dependent upon restoration of habitat. Recovery to the soil and vegetation is dependent upon the extent to damage and varies considerably. Annual vegetation is likely to require 1 to 10 years or more to return to its natural state. Perennial vegetation is likely to require 10 years to decades. For return to the climax state, centuries may be necessary. In some cases, especially where there has been invasion of exotics, recovery may never occur. Therefore, recovery of wildlife populations and productivity is also variable and is likely to require anywhere from 1 to over 100 years to, perhaps, never. Certain species with low population numbers and limited available habitat may never recover if habitat losses are severe.

Previous Barstow-Vegas races have affected 7500 acres of habitat, 4700 acres of which have been damaged to an extent considered unusable for wildlife (80 to 100% loss of vegetation). An estimated additional 478 acres will be denuded of vegetation and rendered unusable for wildlife by the proposed action. If use of the course and race-related areas is discontinued, time for return of productivity to former levels (soils, vegetation, and wildlife populations) will require over 100 years. If use is continued, productivity will continue to decline, the acreage affected will increase, and the time for recovery lengthen.

The race and attendant actions will produce only momentary intrusion of noise, fumes and dust which will not significantly affect long-term productivity of this environment.

The use will directly and indirectly affect archaeological values -- nonrenewable cultural resources. Although the direct impact of this action on cultural resources will be mitigated, the continual running of this event and other similar events within the area and over the same course will have a cumulative effect that will result in destruction and loss of some of the cultural resource values.

The effects of this race upon desert aesthetics may range from momentary (loss of solitude due to noise and sighting of passing motorcycles) to complete loss (in modification of the landscape, i.e., damaged natural features, denuded areas or unsightly roads and trails). The satisfaction of those who enjoy the desert for its natural values may be lost for the short-term if intrusions are only momentary, i.e., noise and sighting of the racers. Such values are restored once the racers are gone. However, for the person who considers this use as an abuse of the native desert environment, restoration will not take place in the foreseeable future.

The long-term productivity of the recreation/aesthetic environment must be considered against the benefits of short-term social gains. Immediate short-term economic gains and psycho-social satisfaction of those associated with the race are obvious. Less obvious are the potential and perhaps likely long-term consequences:

- 1) The running of the proposed race will result in loss or deterioration of natural, cultural, recreation, and aesthetic values which would otherwise be passed on to future generations.

- 2) The race will further marshal that trend which extends to the nation's wild lands - the habits, activities, commotion, and pollution of the urban world. Thus, the integrity of the desert itself will be further impaired. To the extent that the inherent qualities of the California Desert are reduced or lost, the American people lose long-term resource diversity, options, and opportunities.

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The proposed event would result in permanent loss of soil by wind and water erosion along the trail and the start, check refueling, and finish points. The surface soil texture would be changed from a vesicular structure to a more compact, weakly-cemented, massive structure which could result in the long-term effect of reducing its productive capability.

Cumulative effects of the proposed type of land use can result in irretrievable impacts upon non-renewable archaeological resources. The context of cultural materials yields most of the scientific information on man's past. The disturbance of any part of the material destroys contextual information. Therefore, the proposed event would commit some irretrievable cultural resource damage directly. Indirectly, the event may attract people to areas where cultural resources are located, increasing the probability of additional cultural resource losses.

Many impacts on recreation are intangible in that they involve emotions and attitudes rather than direct physical or biological destruction. These conflict situations include loss of or changes in recreation opportunities and environment for wilderness, nature study, and landscape photography. The extent to which these impacts are irreversible or irretrievable are intangible.

In many instances, the impacted components of soil, vegetation, and wildlife habitat can be restored to natural or near natural conditions. Restoration, however, is dependent on no further use of this race course or race associated areas. With protection, full restoration of natural conditions will likely require in excess of 100 years.

The one possible exception is the gila monster population in the Clark Mountains. There are 8 miles of potentially prime habitat in washes that will be impacted by this race. This may be as much as 20% of the existing gila monster wash habitat. The population levels and reproductive potential of this animal are naturally low. Any further reduction of animals and/or limited habitat could put the population in a downward trend from which it may not recover.

The commitment of BLM personnel and local law enforcement agency manpower represents a definite, although rather minor, commitment of resources.

The fuel used by motorcycle racers, spectators, support crews, and joy riders will amount to approximately 167,200 gallons of gasoline (See Tables VII-1 through VII-4 in Section XI, Appendices). An uncalculated amount of oil consumption will also occur. This use of a non-renewable, fossil fuel resource is an irretrievable commitment to the race. Should the race not be held, there will be an unknown but probably lesser amount of petroleum products consumed in conjunction with other off-road activities by many of those who would otherwise have been involved with the race.

VIII ALTERNATIVES TO THE PROPOSED ACTION

A. Rejection of Application (No Action)

Title 43 CFR, at subpart 2924.3, provides that the authorized officer may reject any application for any activity which he considers will constitute undue hazard to participants and spectators, or will irreparably impact scenic and other qualities. The authorized officer in this case is the East Desert Area Manager. He could, after review of the facts of this case, determine that the application should be rejected. Such rejection would be accomplished by issuing a formal decision stating that the application was being rejected, the reasons therefore, and allowing the applicant the right of appeal.

Impacts:

Rejection of the application would require that the sponsors cancel the proposed race. If the race were not held, all the impacts enumerated in Section III, particularly those associated with archaeological, historical, cultural features, soil, vegetation and wildlife fisheries would be obviated. Cancellation by the sponsor, however, does not assure that some type of activity, possibly on a large scale, will not take place. The referee of the sponsoring club has said that they will not attempt to hold the race if the application is rejected. Thus, no sanctioned event would be forthcoming. Several considerations, however, require discussion and evaluation as possible sequels to rejection.

Because of past participation, some riders will be reluctant to see the race cancelled. Others who anticipate the experience for the first time will experience disappointment. Some enthusiasts who plan to participate in this now traditional event have planned vacations around the weekend and the proposed race and have committed themselves to a particular schedule with this in mind.

Based on the above-mentioned factors and others which these will generate, there might be an attempt to hold some sort of unsanctioned race. Should this occur, the authorized officer would attempt to prevent such action by means of a temporary restraining order or other appropriate court action. Aid in preventing such an occurrence would also be sought from local law enforcement agencies.

Should these measures fail to prevent an unsanctioned race, possible effects could include confrontation between Bureau officials and would-be racers, with the further possibility of violence. The mitigating measures proposed for placement in the permit would not be in force, and damage beyond that

discussed in the proposal could occur. No bond would be posted to insure against damage; sanitation, safety and crowd control measures would be lacking.

Further, should the race not take place, the 3000 people expecting to participate, plus 10-12 thousand spectators would lose the social and psychological benefits expected to accrue from it. Persons whose use of the same lands for other recreation pursuits would be in conflict with the proposed race, would benefit from cancellation of the race because of removal of the conflicts. The number of these people is unknown; however, such recreation users as rockhounds, 4-wheelers, photographers and nature fanciers avoid this area at this time because of this annual race.

B. Alternative Routes

Any one of an essentially infinite number of alternative routes could be chosen. Selection of another route would be made in cooperation with the San Gabriel Valley Motorcycle Club to ensure that the alternative course presented sufficient competitive challenge.

1. Colosseum Gorge.

The Colosseum Gorge alternate route begins at Excelsior Mine Road on the West (T. 17 N., R. 12 E., Section 33) and traverses 7.5 miles along the northwestern and northern edge of Clark Mountain to Section 17 (T. 17 N., R. 13 E.,) where a road from Keany Pass intercepts the course. At that point the course turns east through the Clark Mountains down the Colosseum Gorge and the Ivanpah Springs for about 4.5 miles. From that point, the course heads east and northeast to Ivanpah Lake.

The Colosseum Gorge route covers six types of habitats. There are 2 miles of Joshua Tree or Mojave Yucca and Creosote Bush -- Burro bush communities, 8 miles of Joshua Tree - Mojave Yucca - Cactus Communities, 1.75 miles of high elevation Desert Willow Wash, 1 mile of Blackbrush and 3 miles of Cheese Bush Wash (high elevation). In addition, there are 1.3 miles of ecotone in the Colosseum Gorge -- combinations of such communities as Joshua Tree - Mojave Yucca Cactus, Blackbrush, Pinyon-Juniper Woodland, high elevation Cheese Bush and Desert Almond Wash. There are additional floral elements that are limited to the Gorge. See Section II for discussion of the plant and wildlife communities found here.

Impacts:

See Section III for detailed impacts on these communities. Summary impacts for this alternative are as follows:

a. The course covers old road from the Excelsior Mine Road through Joshua Tree - Cactus Communities to the high elevation Desert Willow Wash on the northeast side of Clark Mountain. Impacts here will be relatively minor.

b. There is an existing road through the Desert Willow Wash to the entry of Colosseum Gorge. The terrain is such that the road as well as Wash bottom will be used by the race participants. Impacts are estimated to be moderate to high, especially on gila monster habitat, and on race wildflowers.

c. The Colosseum Gorge will be exposed to several impacts. This segment of course traverses a narrow rocky and steep canyon on the northeastern edge of Clark Mountain. The Gorge contains several rare species of plants which include but are not limited to Douglas Hackberry, Turpentine Bush, Alverson Cactus, Low Grease Bush, Spiny Tipped Tongue Flower Horsebrush (Tetradynua argyraea), Barnaby's Phacelia, long-flowered Rabbitbrush, and several others. The rare plants are likely to sustain heavy impacts from motorcycles because of the narrow width of the canyon. Another impact would be noise. Motorcycle noise would be undissipated and concentrated because of the canyon, and as such would have potential for severe impact on significant wildlife species. Examples include but are not limited to Nelson bighorn sheep, rock squirrel, bobcat, prairie falcon, and Virginia Warbler.

Safety of the riders is another consideration. Portions of the Gorge terrain are very hazardous.

d. The Joshua Tree - Mojave Yucca - Cactus and the high elevation Cheese-Bush communities extend from the Gorge to west of Ivanpah Lake. Portions of the course are on old road and portions on wash and trail. There are many rare species of wildflowers and several significant wildlife species. The wash is also prime gila monster habitat. Impact in this area is potentially high.

2. Route Along Keany Pass Power Line Road.

As an alternative, the course could be as proposed to a point in T. 17 N., R. 12 E., section 33, due west of the Pachalka Spring Road. From this point proceed northward 2.75 miles along an old race trail in Kingston Wash to its intersection with the Keany Pass power line maintenance road. Turn east on the maintenance road and route the course 15.75 miles along the maintenance road to a point in T. 17 N., R. 14 E., section 11, the SE $\frac{1}{4}$ SE $\frac{1}{4}$. At this point swing southeast along an old race trail for 1 mile to the State Line gas stop. From the State Line gas stop the route would continue as originally proposed. This alternative appears in dashed lines on the maps of pages II-90 and II-91.

Impacts:

The impacts expected from the selection of this route are as follows:

a. There will be 2.75 miles of travel along an existing motorcycle race trail in Kingston Wash. The habitat is identified on map page II-90 and in the draft text on page II-19, Wash: Acacia-Black-Banded Rabbit Brush plant community. See Section III.B., for impact assessment.

b. There are 15.75 miles of trail along a road used for general travel through Keany Pass and for maintenance of the Keany Pass Power Line. The

impacts here would be as described in section III regarding noise, air and rights-of-way. No other significant impacts are expected because the route lies along a well traveled road which is maintained with heavy equipment and wide enough to accommodate the racing vehicles.

c. There would be 0.6 miles of travel on an existing motorcycle race trail through a creosote bush community with impacts as described in Section III of the draft and 0.4 miles of travel on an existing race trail through an alkali sink, lake edge community. See map page II-91 and follow the text for a description and impact assessment.

This route would have an additional impact on rider safety because of the high speeds attainable on the graded maintenance road and the presence of the power line towers.

The route would eliminate impacts upon the biological communities, including rare plants and animals, in the Colosseum Gorge and Pachalka Spring areas. The route would also channel traffic away from archaeological resources in those areas and into low risk areas to the north.

3. Route Along Keany Pass Road

As an alternative, the course could be as proposed to a point in T. 17 N., R. 12 E., section 33, due west of the Pachalka Spring Road. From this point, proceed northward 4.5 miles along an existing motorcycle race course in Kingston Wash to a point in the NE $\frac{1}{4}$ SE $\frac{1}{4}$, section 7, T. 17 N., R. 12 E., SBM. From this point turn northeastward, 5.25 miles along an existing motorcycle race trail to its point of joining with bulldozer trail in the SE $\frac{1}{4}$ NW $\frac{1}{4}$, section 36, T. 18 N., R. 12 E., SBM. Continue 2.25 miles northeastward along the bladed trail and road through Mesquite Pass to its intersection with a large wash in E $\frac{1}{2}$ W $\frac{1}{2}$, section 19, T. 17 $\frac{1}{2}$ N., R. 13 E., SBM. Turn southeastward along an existing race trail and road leading up the wash, over Keany Pass and continuing eastward down a wash and race trail into Ivanpah Lake and the gas stop for a total of 9 miles. From the State Line gas stop, the route would continue as proposed. This alternative appears on location maps in the impact statement text.

Impacts:

The impacts to be expected from the selection of this route are as follows. A discussion of the specific impacts in each community can be found in the Impact Section, Section III.

a. There would be an additional 4.5 miles of travel along an existing motorcycle race trail in Kingston Wash. The habitat is identified on map page II-90 and in the draft text on page II-19 as Wash Acacia-Black-Banded Rabbit Brush plant community.

b. The alternative includes 2 miles along an existing motorcycle race trail through a creosote bush scrub community, as described on page II-22 of the draft text.

c. There are 1.5 miles along an existing race trail through a Joshua Tree- Creosote bush community, as described on page II-23 of the draft text.

d. There are 1.25 miles along an existing motorcycle race trail through a Joshua tree - Mojave Yucca - Cactus community, as described on page II-24 of the draft text. Then 2.25 miles of travel along an established road and race trail in the same community.

e. This alternative includes 3.25 miles of travel along a road in a wash bottom which has been used as a race trail traversing a plant community described as a cheesebush wash community described on pages II-19 and II-20 of the draft text.

f. There are 3.25 miles along washes on a road which has been used as a race trail traversing a community identified as a desert almond wash and described on page II-21 of the draft text.

g. The alternative includes 6 miles of existing motorcycle race trail traversing a plant community identified as cheese bush wash and described on pages II-19 and II-20 of the draft text.

These descriptions are tabulated below.

Plant Community	Distance Miles	Acres Existing Damage	Acres Expected Add'l Damage	Description of Trail Segment	Location of Dis- cussion in Draft
Acacia-Black-Banded Rabbit Brush	4.5	4.4	.4	Trail in Wash	II-19
Creosote Bush Communities	2	1.9	.2	Trail across Alluvial fan	II-22
Joshua Tree-Creosote Bush	1.5	1.5	.1	Trail across Alluvial	II-23
Joshua Tree-Mojave Yucca-Cactus	3.5	3.4	.3	Trails and Roads acres	II-24
Wash-Cheese Bush	9.25	11.2	1.1	Road in Wash Bottom	II-19 & II-20
Wash-Desert Almond	3.25	4.0	.4	Road in Wash Bottom	II-21
TOTALS	24	26.4	2.5		

This route would eliminate impacts upon the biological communities including rare plants and animals in the Colosseum Gorge and Pachalka Spring areas. This alternative channels traffic away from archaeological resources in those areas and into low risk areas to the north.

C. Barstow Start Area

The start of the proposed race is located in Yermo, about 20 miles east of Barstow. In the past, the race start was located immediately outside Barstow. This start area could be used for the proposed race.

Impacts:

Location of the start area closer to Barstow would result in increased demands on available public services. In the past, when the race start was located nearer to Barstow, there were instances of criminal activity and hazards to public safety. The super-imposition of the 13,000 - 15,000 race participants, crewmen, and spectators on the 23,000 population of the Barstow area has led to increases in traffic safety problems. The private lands in the area near Barstow caused difficulty in coordinating the control of the start area. It is anticipated that similar impacts would result from moving the start back to the Barstow area.

D. Reducing the size of the Start Area.

A reduction in the size of the start area would be accomplished by requiring that more starting waves, with fewer participants per wave be employed.

Impacts:

The primary impact of reducing the number of participants per starting wave would be to reduce the area disturbed by the race start. The proposed start of 3,000 entrants in three waves of about 1,000 motorcycles per wave, will disturb an estimated 16 acres in addition to the 730 acres which have previously been disturbed. By doubling the number of waves, with 500 motorcycles per wave, incremental damage to this additional 16 acres could be avoided. However, much of the start area experiences ground disturbing impacts from casual riding by spectators. This alternative would have no effect upon impacts resulting from this casual use.

E. Alternative Finish Area.

Impacts:

The finish area for the Baker to Las Vegas race could be used for the proposed Barstow to Las Vegas race. The finish area for the Baker to Vegas race, a small gravel pit area lying two miles south of the proposed finish area is a disturbed area large enough to accommodate approximately one half of the expected crowd without additional resource damage. Home owners near the site have complained of the disturbance caused by previous events at this site.

IX. CONSULTATION AND COORDINATION WITH OTHERS

A. Consultation and Coordination in the Development of the Proposal and in the Preparation of the Draft Environmental Statement.

During the past three years ORV permit procedures and general use stipulations have been developed jointly by governmental agencies and users of the desert resources. In this time, many interested organizations and landowners have been contacted concerning actions of this type.

Current ORV permit procedures require that State and local law enforcement agencies be contacted by the applicant in it's advance planning. Permit procedures also require that permission be obtained from private landowners affected by the action.

Agencies specifically contacted in the preparation of this document include:

Federal Agencies

U.S. Department of Agriculture, Soil Conservation Service,
California and Nevada

State Agencies

California Dept. of Parks & Recreation, Historical Resources Section
Nevada State Parks Department

County Agencies

Air Pollution Control District, San Bernardino Co., California
Air Pollution Control Div., County Health Dept., Clark Co., Nevada
San Bernardino County Museum, California
Las Vegas Museum, Nevada

Academic Institutions

University of Nevada at Las Vegas
University of California at Riverside

B. Comments were requested from the following federal, state and local agencies. In addition to the agency review process, public requests resulted in distribution of a total of 300 copies. A distribution list is on file and available for public inspection in the California State Office Bureau of Land Management, 2800 Cottage Way, Sacramento, California.

Federal Agencies

Department of Agriculture
Forest Service
Soil Conservation Service*

Department of the Interior
Bureau of Outdoor Recreation*
Fish and Wildlife Service
Bureau of Reclamation*
National Park Service
Regional Solicitor

Environmental Protection Agency

State Agencies

Office of Planning and Research, Office of the Governor (State
Clearinghouse, California)
Nevada State Clearinghouse*

Regional and Local

San Bernardino County, CA
Water Quality Control Board
Air Pollution Control Board*
Board of Supervisors
County Museum
City Manager, Barstow, CA
County Sheriff's Dept.
Baker Chamber of Commerce

Clark County, NV
Water Quality Control Board *
Air Pollution Control Board
Board of Supervisors
County Museum
City Manager, Las Vegas, NV *
County Sheriff's Dept.

Organizations and Individuals

American Motorcycle Association *
San Gabriel Valley Motorcycle Club
California Off-Road Vehicle Association
Rescue 3
California Assn. of 4-Wheel Drive Clubs, Inc.
California Federation of Mineralogical Societies
World of Rockhounds Association
California Outdoor Recreation League
Sierra Club
Nature Conservancy*
Desert Protective Council*
Isaac Walton League
National Audubon Society*
Wilderness Society
California Wildlife Federation

Society for California Archaeology
University of California*
University of Nevada, Las Vegas
Environmental Defense Fund
California Native Plant Society*
Associated Blazers of California
California Mine Operators Association
Southern Pacific Land Company

C. Comments Received

Over 50 comments were received from Federal, State and local public agencies, private organizations, and individuals. Copies of those comments directed at the draft environmental statement are included in the following pages.

Comments were analyzed to determine needed revisions and necessary improvements in the environmental statement. The response to each comment is on a separate sheet, following each comment:

* Comments received.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

P.O. Box 1019, Davis, CA 95616

October 7, 1974

Mr. J. L. Penny
State Director, U.S. Department of Interior
Bureau of Land Management
Federal Office Building, Room E-2841
2800 Cottage Way
Sacramento, CA 95825

	Initial	Date
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2	ASD	10/10/74
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Dear Mr. Penny:

We acknowledge receipt of the draft environmental statement for the proposed motorcycle race between Yermo, California and Las Vegas, Nevada, dated September 11, 1974, for our review and comment.

We have reviewed the above statement and compliment you on the thoroughness of the study.

The Soil Conservation Service is deeply concerned with soil erosion by wind and water, loss of plant cover, and damage to wildlife habitat. The statement implies that revegetation following the race will be by natural means. We feel that provision should be included for mulching of spectator concentration areas ahead of their use and possible watering down to reduce dust. Following the race, we feel that provision should be made for mulching of the disturbed trail. This could be the application of a synthetic mulch material to help stabilize soil particles.

References, Section X is incomplete under the "Soils" heading. It should include those references at the top of page X-7 that are presently listed under the heading, "Aesthetics and Recreation." Reference to a statewide general soil map done in 1968 by the Soil Conservation Service, page II-3, paragraph 5, is incorrect and should be eliminated. SCS has not published such a map for California. The carrying out of the proposal will have no direct effect on Soil Conservation Service projects or programs in the area under consideration.

You may wish to consult with our personnel at Barstow and Apple Valley field offices to discuss alternatives for treatment of disturbed areas.

We appreciate the opportunity provided for review and comment.

Sincerely,

Wm. H. Payne acting
G. H. STONE
State Conservationist

cc: Don Miller, Harlan McIntire,
Harold Laudermilk



COMMENTS ON PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE

EPA is concerned with the potential damage to the fragile desert ecosystems which may result from such significant numbers of off-road vehicles, spectators, and spectators' vehicles. Within EPA's statutory authority, our direct concern is focused on the emissions of fugitive dust and the resulting adverse effects on public health and welfare.

Sampling by the Clark County Air Pollution Control District of fugitive dust concentrations produced by similar races in the past indicate that the short-term (24-hour) primary National Ambient Air Quality Standard for suspended particulate (260 ug/m^3 not to be exceeded once per year) will be exceeded in the vicinity of the race.

Air pollution control regulations have been developed and adopted by the respective States of California and Nevada and are contained in the respective State Implementation Plans. Both states have fugitive dust control regulations which stipulate procedures and/or controls to suppress dust and minimize dust generation. The draft environmental statement contains no reference to the suppression of dust. The final environmental statement should present the state and local air pollution control regulations applicable to fugitive dust, and fully discuss the measures the sponsors of the race will be required to utilize to comply with such regulations and controls.

The mitigating measures included in the proposed action appear to be complete and comprehensive (except for dust suppression as noted above). The actual environmental damage that may result from the race itself, support activities, and spectator behavior will largely depend on the success of implementing all the mitigating measures. The final environmental statement should discuss the probable success of such mitigation using the experiences of prior races as examples.

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Soil Conservation Service, letter of October 7, 1974

Mulching to minimize physical impact in visitor concentration areas has been considered as a mitigation measure. However, certain problems would attend the application of a mulch. This report has indicated that visitor concentration areas, including the zones of casual "joy-riding," will be as extensive as six miles in diameter. The race course itself is 150 miles long. As a result, the amount of mulch (bark, wood chips, gravel, etc.) required would be considerable, certainly beyond ready availability and economic practicality. Additionally, the application of a mulch, were it available, would introduce an aesthetic impact upon the desert scene possibly as offensive as motorcycle tracks. Water mulching has also been considered but will not be employed because of the substantial amounts necessary where water is generally unavailable and the likely injurious effects which would result from the numbers of heavy equipment required to spread the water.

A map prepared by George Borst, Soil Conservation Service, and entitled General Soils Map of the Colorado Desert Sub-Region, Calif. (3-15-68) was used in the soils analysis in this report.

The References Section of this report has been corrected to show all citations regarding soils in the "Soils" section.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

100 CALIFORNIA STREET
SAN FRANCISCO, CALIFORNIA 94111

OCT 16 1 56 PM '74

CALIF. STATE OFFICE
SACRAMENTO, CALIF.

Mr. J. R. Penny
State Director
Bureau of Land Management
2800 Cottage Way, Room E-2841
Sacramento CA 95825

OCT 15 1974

Dear Mr. Penny:

The Environmental Protection Agency has received and reviewed the draft environmental statement for the following proposed action, Proposed Barstow-Las Vegas Motorcycle Race, Mojave Desert, California and Nevada.

EPA's comments on the draft environmental statement have been classified as Category ER-2, specifically environmental reservations pending resolution of the comments noted in the attachment to this letter. Definitions of the categories are provided on the attachment. The classification and the date of EPA's comments will be published in the Federal Register in accordance with our responsibility to inform the public of our views on proposed Federal actions under Section 309 of the Clean Air Act. Our procedure is to categorize our comments on both the environmental consequences of the proposed action and the adequacy of the environmental statement.

EPA appreciates the opportunity to comment on this draft environmental statement and request one copy of the final environmental statement when available.

Sincerely,

L Russell Freeman, Deputy

Paul De Falco, Jr.

Regional Administrator

Acting

Attachment

cc: Council on Environmental Quality, Wash., D.C. 20460

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: U.S. Environmental Protection Agency, letter of Oct. 15, 1974

Section III-A-4b, Particulate Matter, has been expanded to reflect this information. The Federal, Nevada and California air quality standards for particulates (24-hour Fugitive dust) will be exceeded.

As noted in the mitigation section, the spectator access dirt roads at the finish will be watered by the sponsor before and during occupation to reduce the generation of airborne particulate matter. Watering the pit stops and start area is unadvised because of the possible extensive soil rutting and vegetation damage which would be caused by the heavy water trucks.

The mitigation proposed for this race exceeds that of all other past races. Thus, the adherence to mitigation measures cannot be predicted from past experience. In the past, Barstow to Vegas race sponsors generally cooperated on litter cleanup, crowd control, course alignment and other requirements of the Bureau.



RECEIVED
UNITED STATES
DEPARTMENT OF THE INTERIOR

RECEIVED
BUREAU OF LAND MANAGEMENT

OCT 11 9 55 AM '74
BUREAU OF OUTDOOR RECREATION

PACIFIC SOUTHWEST REGIONAL OFFICE

BOX 36062

450 GOLDEN GATE AVENUE

SAN FRANCISCO, CALIFORNIA 94102

CALIF. STATE OFFICE
SACRAMENTO, CALIF.

REPLY REFER TO:

E3035

Your Ref:

1792 (CAL)

C-911.4

October 9, 1974

To	Initial	Date
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MS		
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Memorandum

To: State Director, Bureau of Land Management, Sacramento

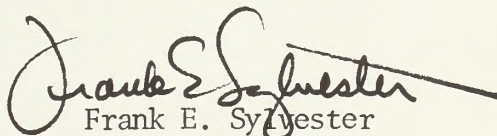
From: Regional Director

Subject: Review of September 1974 draft environmental impact statement on the proposed Barstow-Las Vegas Motorcycle Race (DES 74-85)

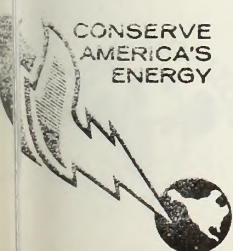
We have reviewed the subject statement submitted with your September 11, 1974 letter, and we compliment you on the preparation of a very comprehensive environmental statement.

We offer one minor clarification to the discussion of "Driving for Pleasure" (page II-57). The Bureau of Outdoor Recreation's report published in April 1967 is a report of survey information gathered by the Bureau of Census for the Bureau of Outdoor Recreation during the months of June, July and August of 1965, and the study referred to as the "1960 B.O.R. study" is actually a report prepared for the Outdoor Recreation Resources Review Commission from data collected by the Bureau of Census during the months of June, July and August of 1960.

We appreciate the opportunity to review your draft environmental impact statement.


Frank E. Sylvester

CONSERVE
AMERICA'S
ENERGY


Save Energy and You Serve America!

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Bureau of Outdoor Recreation, letter of October 9, 1974

The clarifications suggested have been made in the body and reference section of this report.



United States Department of the Interior
BUREAU OF RECLAMATION

LOWER COLORADO REGIONAL OFFICE

P.O. BOX 427

BOULDER CITY, NEVADA 89005

IN REPLY
REFER TO: LC-150

120.1

OCT 2 1974

Your reference:
1792 (CAL)
C-911.4

To	Initial	Date
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Action By _____
Return to _____

Mr. J. R. Penny
State Director
Bureau of Land Management
Federal Office Bldg., Room E-2841
2800 Cottage Way
Sacramento, California 95825

Dear Mr. Penny:

Your letter of September 11, 1974 to the Bureau of Reclamation, Mid-Pacific Region, Sacramento, California, has been forwarded to this office for our review.

The Bureau of Reclamation has reviewed the proposed Barstow-Las Vegas Motorcycle Race Draft Environmental Impact Statement. Due to the thoroughness of the statement and because the motorcycle race will have no adverse impacts on Reclamation lands or existing projects, we have no comments or suggestions to offer.

Sincerely,

E. A. Lundberg

E. A. Lundberg
Regional Director

In duplicate



'76

Let's Clean Up America For Our 200th Birthday

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Bureau of Reclamation, Lower Colorado Regional Office

The Bureau of Reclamation indicated that the proposed motorcycle race would have no impact on Reclamation lands or existing projects.



United States Department of the Interior

NATIONAL PARK SERVICE

JOSHUA TREE NATIONAL MONUMENT

74485 PALM VISTA DRIVE

TWENTYNINE PALMS, CALIFORNIA 92277

REPLY REFER TO:

A3815

October 2, 1974

Mr. J. R. Penny, State Director
Bureau of Land Management
Federal Office Building, Room E-2841
2800 Cottage Way
Sacramento, California 95825

Dear Mr. Penny:

I appreciate the opportunity to review and comment on your draft environmental statement on the proposed motorcycle race between Yermo, California and Las Vegas, Nevada on November 30, 1974. This report reflects a very complete and detailed analysis of the conditions and the impact that such an event will have on the soil, wildlife, the habitat, vegetation, and human interest values in the area.

This event should not affect the Joshua Tree National Monument directly. However, we can expect a slight indirect effect due to the possibility of would-be visitors being diverted from this area as spectators at such a competitive spectacle and, as a result, reduce our normally heavy visitation over this holiday weekend. Other than that, it should have no other impact on this area.

Although I did not cover the environmental statement with a fine tooth comb, it appears that every aspect of the impact of such an event has been covered. The statement quite candidly addresses itself to the adverse impact of such a congregation of contestants and spectators at the start area and various staging locations. The requirement that the entire race will be held to the existing roads and trails, as defined in the interim critical management program for recreation vehicles in the California Desert, is encouraging. However, the size of this event will extend the impact of previously undisturbed areas. This, plus my concern for the deleterious effect of the casual riding around the camp prior to the race, disturbs me. I have no suggested alternatives or courses of action that would restrict this type of impact, except to hope that the permit will include, or require, a thorough cleanup of the start and various staging areas.

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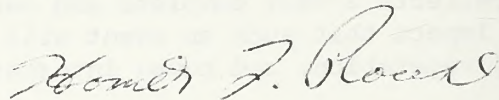


Another concern deals with the affect authorization of this event will have on your Interim Critical Management Program. It is pointed out in the statement that portions of the recommended course follow identified competitive event courses, however, it is noted that a major portion of the area will traverse restricted, special designed areas, which require detailed planning to be prepared in cooperation with other governmental agencies and public interest groups. It would appear that the issuance of this permit and authorization of this event will, in effect, dictate the future decision concerning such activity in these special design areas.

Aside from the concerns indicated above, I would again extend my compliments to your staff on the preparation of a most complete and comprehensive environmental statement.

My thanks for the opportunity to review and comment on this statement.

Sincerely yours,

A handwritten signature in cursive script, reading "Homer L. Rouse". The signature is written in dark ink and is positioned above the typed name and title.

Homer L. Rouse
Superintendent

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Joshua Tree National Monument, letter of October 2, 1974

Trash cleanup required by the permit is discussed in the chapter titled "Mitigating Measures Included in the Proposed Action." A complete trash and litter cleanup of the start, pit, finish and entire course is required within 15 days of the completed event. The Bureau of Land Management will make a compliance check to enforce this provision.

The relationship of the proposed event to the Interim Critical Management Program (ICMP) is discussed in the chapter titled "Description of the Proposal." The letter questions whether issuance of the permit for the proposed event will limit the range of alternatives available when the detailed plan is prepared for the Special Design areas. All of the Special Design areas traversed by the route are also designated Competitive Event areas in the ICMP. The ICMP provides that "...organized competitive events will be permitted only in designated competitive event areas on designated competitive courses." Since the ICMP provides for competitive events within the Special Design areas traversed by this proposal, the event will not constrain future plans for these areas. The entire proposed route is on existing roads and trails as defined by the ICMP. There will probably be some widening effect, but the route will not create new roads and trails.

DEPARTMENT OF PARKS AND RECREATION

P.O. BOX 2390
SACRAMENTO 95811

SEP 20 12 37 PM '74

CALIF. STATE OFFICE
SACRAMENTO, CALIF.

September 24, 1974

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Mr. J. R. Penny, State Director
Bureau of Land Management
State Office
2800 Cottage Way, Room E2841
Sacramento, California 95825

Dear Mr. Penny:

We have received your letter of September 13, 1974 transmitting a copy of the draft of the Environmental Impact Statement regarding the proposed Barstow - Las Vegas Motorcycle Race.

As staff for the State Historic Preservation Officer, we have determined that there are no State Historical Landmarks or sites on the National Register of Historic Places in the immediate vicinity of the proposed project. However, Zzyzx Springs (Soda Springs) is a California Point of Historical Interest. The historical integrity of this site, as well as that of the Spanish Trail, Old Government Road, and the Tonopah/Tidewater Railroad, should be protected.

The Draft Environmental Impact Statement fails to adequately identify all relevant cultural resources, as page V-16 reports that "the field examination was not detailed enough to identify all cultural resources along the route of the proposed action. Therefore, if cultural resources occur in unsurveyed portions of the course, there may be adverse effects upon them, as well as to the unknown cultural resources located outside of the specific course by the unpredictable actions of pickup crews, spectators, and rescue vehicles."

Many unrecorded historic and prehistoric sites may exist. As noted on page II-60, five major playas (West Cronese, East Cronese, Ivanpah, Roach, and Jean) are crossed by the proposed racecourse. Only four of the playas have been systematically surveyed in their entirety. "Some of these playas could possibly yield additional evidence of Early Man and/or western paleo-Indian occupation and civilization."

To conform with Executive Order 11593, it should be noted that Section 800.4(a) of the Procedures for the Protection of Historic and Cultural Properties requires that the Bureau of Land Management identify, as early as possible and in all cases prior to agency decision, properties located within the area of the undertaking's potential environmental impact that are included in or eligible for inclusion in the National Register of Historic Places.

The Environmental Impact Statement identifies four properties (East Cronese Lake, BV-5 Soda Lake, Pachalka Spring, and the Tonopah/Tidewater Railroad) which appear to be eligible for nomination to the National Register. Page III-67 mentions that "the Criteria of Effect was applied to each. Following this

September 24, 1974

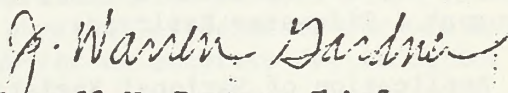
Criteria it has been determined that the proposed action will not cause any change in the quality of the archeological or historical character that qualified the properties under the National Register Criteria." The Environmental Impact Statement, however, further speculates that the historical integrity of these potential National Register sites could be severely compromised by continued ORV activities in the area.

Section 800.8 specifies that "a Federal, federally assisted, or federally licensed undertaking shall be considered to have an effect upon a National Register property or property eligible for inclusion in the National Register when any condition of the undertaking causes or may cause any change, beneficial or adverse, in the quality of the historical, architectural, archeological, or cultural character that qualifies the property under the National Register Criteria." Generally, adverse effects occur under conditions which include but are not limited to destruction or alteration of all or part of a property and the introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting.

The specific mitigation proposals described in the Environmental Impact Statement fail to provide adequate protective measures for the cultural resources. Page II-61 of the Environmental Impact Statement states that the proposed racecourse comes within three miles of 58 recorded archeological sites, two historic trails, and one historic railroad. However, specific markings and/or course marshals will be available at only "six of the locations to alleviate or moderate impact to cultural resources." While impact may be "moderated" at these sites, "the proposed racecourse is expected to directly impact all three sites of BV-2, BV-3, and BV-4 Continued unrestricted use through these sites may completely destroy what remains of their scientific value."

Please do not hesitate to contact this office should you require additional assistance.

Sincerely,


for Russell W. Porter, Chief
Grants and Statewide Studies Division

7-2/7

cc: Mr. Louis S. Wall
Advisory Council on Historic Preservation
Post Office Box 25085
Denver, Colorado 80225

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: California State Department of Parks and Recreation

To facilitate review and in compliance with the Advisory Council on Historic Preservation's Procedures for the Protection of Historic and Cultural Properties (36 CFR Part 800), we submit the following:

1. Identification of National Register Properties. Our staff's have agreed that there are presently no National Register of Historic Places properties or State Historical Landmarks within the immediate vicinity of the proposed action. Zzyzx Springs (Soda Springs), a California Point of Historic Interest, is entirely out of the area of the undertakings' potential environmental impact in that it is located more than a mile north of the proposed race route. The Bureau of Land Management has closed the Zzyzx Springs location to the public and has provided care takers on a 24 hour basis.

2. Identification of all properties possessing cultural resources. A field examination was conducted of the area of the undertakings' potential environmental impact. The area of potential environmental impact is defined as all of the area which the motorcycles involved in the proposed race, as well as the support vehicles, will physically pass over and those areas in which spectators and pit crews will be expected to congregate. The entire route of the proposed course follows existing roads or previously used off-road vehicle trails. A field reconnaissance was made of every portion of the proposed course where the potential occurred for impacting cultural resources.

Ten properties containing cultural resources were identified within the area of potential environmental impact. Discussed in the draft Environmental Impact Statement (II-62 to II-66) and located on Index Sheet D-2, these properties are (1) BV-1; (2) BV-2, BV-3 and BV-4; (3) East Cronese Lake; (4) BV-5; (5) BV-6; (6) BV-7; (7) Pachalka Spring; (8) BV-8; (9) Old Government Road; and (10) Tonapah & Tidewater Railroad.

3. Application of National Register Criteria. The National Register Criteria (63 CFR 800.10) was applied to each of the 10 cultural resource properties identified within the area of the proposed undertakings' environmental impact, Table III-C-1 outlines the evaluation of properties for National Register of Historic Places eligibility. Four of these properties are portions of larger areas which have been previously identified by our staff as potential candidates for nomination to the National Register of Historic Places as archaeological or historical districts. These properties are East Cronese Lake Archaeological District, Mojave Sink Archaeological District (BV-5 is situated in the extreme northern portion of this potential nomination), Old Government Road Historical District, and the Tonapah & Tidewater Railroad Historical District.

Because of its unique location and archaeological potential, an additional property, Pachalka Spring, has been identified as appearing to be eligible for National Register nomination.

East Cronese Lake: The archaeological resources within the East Cronese Lake area are located in the sand dunes around the playa. They consist of pottery, chipped stone and groundstone tools, flakes, and numerous fire-cracked rocks. This is all indicative of late prehistoric and protohistoric occupation. This entire archaeological site locality meets the criteria for nomination of the property to the National Register of Historic Places as the "East Cronese Lake Archaeological District."

BV-5 (Soda Lake SW): This archaeological site consists of a fairly extensive scatter of cultural remains (e.g., chipped-stone tools, pottery, and fire-cracked rock) along the western edge of the playa. The heaviest concentration of artifacts was noted in the blowout areas among the sandy hummocks. A thin scattering of cultural material was found in the mesquite dunes of the site. The range of artifacts observed suggest a variety of prehistoric activities indicative of a seasonal encampment.

This site is situated at the extreme northern portion of an area which our staff has tentatively identified as the "Mojave Sink Archaeological District"--a potential candidate for nomination to the National Register of Historic Places. Until time, funding and manpower allow for a proper assessment of the significance of the cultural resources present, the area of this interim archaeological district presently covers more than 80 square miles.

Pachalka Spring: The Pachalka Spring area appears to be eligible for nomination to the National Register of Historic Places as an archaeological site. The area contains a series of petroglyphs and two probable Midden locations containing a large quantity of fire-burnt rocks. The presence of the spring and the variety of resources available make this a unique site location.

Old Government Road: The route of the Old Government Road, or the "Mojave Road" which connected Fort Mojave with Los Angeles has been identified as a candidate for nomination to the National Register of Historic Places as a historical district. Historic records indicate that the road ran south southwest from Old Fort Soda to the Mojave River Wash east of Afton Canyon. The exact route of this road has not been documented but the proposed race course does cross the area at the southwestern side of Soda Playa where the road is believed to have once run. No physical evidence of the Old Government Road has yet been found that would allow for an accurate determination of the road's exact route through this area.

Tonapah & Tidewater Railroad: The route of the Old Tonapah and Tidewater Railroad between Beatty and Ludlow has been identified as a possible candidate for nomination to the National Register of Historic Places as a historical district. The earthen berm and the splinter remains of old railroad ties are all that presently remain of this unusual "desert community" railroad.

4. Determination of Effect. To determine whether the undertaking shall be considered to have an effect on the properties identified as eligible for

inclusion in the National Register of Historic Places (36 CFR 800.4(a)(2), the Criteria of Effect, set forth in 36 CFR 800.8, was applied to each.

East Cronese Lake: The proposed race course will not impact any of the archaeological resources and will not change the quality of character that qualifies the property. The proposed course through the potential National Register property follows an existing motorcycle trail that has been used for previous races for more than five years. Nevertheless, the permittee will be required under the supervision of BLM personnel, to extensively mark and flag the course through the area and to provide course marshals to guarantee that there will be no impact to the cultural resources.

BV-5: The proposed course follows the route of an existing motorcycle trail for about 150 feet through the mesquite dune on the western side of BV-5 before dropping into the blowout area along the southwest side of Soda Playa. To guarantee that the riders will stay on the course through the mesquite dune, the course will be flagged and marked to funnel the riders into the dune where natural physical restraints limit the course width to about five feet. Out of the mesquite dune, the course will be limited to the existing road through the blowout area and across the playa. Course marshals and BLM personnel will be strategically situated in this area to provide additional protection.

With the above mitigations, the proposed undertaking will not cause any change in the quality of character that qualifies the property for nomination to the National Register of Historic Places.

Pachalka Spring: New direct impact to the cultural resources at Pachalka Spring is anticipated to be non-existent. The proposed course through this location follows a graded road that stays to the south of the main spring area. The road that loops into the spring area will be blocked and course marshals will be present to provide protection. With these measures, the undertaking will not change the quality that qualifies the property under the National Register criteria.

Old Government Road: The area where the Old Government Road is believed to have crossed the route of the proposed course is covered by the protection measures discussed for BV-5. Since the proposed course through this area will be tightly controlled, the undertaking will not change the quality that qualified the Old Government Road for nomination to the National Register.

Tonapah & Tidewater Railroad: The portion of the Tonapah and Tidewater Railroad bed which the proposed course crosses is an existing dirt road that runs east across Soda Lake. To prevent further deterioration to the old railroad grade, crossing will be limited to the existing road. This will be adequately marked and flagged and course marshals will be present to provide added protection. The proposed undertaking will not further change the quality of the character that qualifies the Tonapah and Tidewater Railroad for eligibility for the National Register of Historic Places.

COMMENTS FROM THE NEVADA STATE CLEARINGHOUSE
(telephoned 4:00 p.m., Friday 10/11/74)

1. The Final EIS should clearly note that this statement is only for the proposed 11/30/74 race, and will not be acceptable for other races. If future races are to be considered, they must be accompanied by a new EIS as they do not use the same course, or a supplemental update of the same course is to be used.
2. The Nevada Department of Fish and Game indicates habitat losses are clearly out of proportion to the values of the proposed race. This is particularly true with the indication that it may become an annual affair.
3. The Department of Human Resources, Division of Health, Bureau of Environmental Health:

The Nevada Bureau of Environmental Health Staff has evaluated the potential air pollution impact of the proposed motorcycle race, using "Investigations of Fugitive Dust - Sources, Emissions, and Control", prepared for the U. S. Environmental Protection Agency by PEDCO - Environmental Specialists, Inc. and the computer dispersion model "HIWAY" for particulate emissions to calculate ambient air concentrations within Nevada.

The PEDCO study determined particulate emission factors for vehicles moving on unpaved roads and at different speeds. Ambient air quality data was gathered and a relation developed between vehicle speed and dust emissions that follow the equation:

$$(1) \quad E = (0.16)(1.068)^X,$$

E = dust emissions in lbs/veh.mile

X = vehicle speed in miles per hour

Use of equation 1, with speeds of 15 mph and 40 mph yield 0.43 lbs. per

vehicle mile, respectively. These figures, however, should be corrected because the ambient air quality sampling device, used to obtain the relationship, measured only a narrow range of particulate particle size. When corrected to the high volume sampler, the equation become:

$$(2) \quad E = (0.27)(1.068)^x$$

The emissions for 15 mph and 40 mph became 0.72 lbs/veh. mile and 3.75 lbs/vehicle mile, respectively.

The draft environmental impact statement, published by BLM, assumes that only about 1000 entrants (one-third of those entered) will be left in the race after the third pit stop at the stateline. Using the 1000 entrants and a distance of 36 miles for the race within Nevada the predicted amount of airborne particulate (dust) would be generated, 13 tons at an average speed of 15 mph and 67 tons at a speed of 40 mph.

Bureau staff also used the "HIWAY" computer model to calculate ambient air particulate concentrations where the general public would have access. Assuming the emission factors determined in the PEDCO study for 15 mph and 40 mph, correcting them using the relationship between equations (1) and (2), the predicted 24 hour ambient air concentrations at 15 mph and 40 mph are:

$$15 \text{ mph} = 51 \mu\text{g}/\text{m}^3$$

$$40 \text{ mph} = 195 \mu\text{g}/\text{m}^3$$

The state and national air ambient quality standards allowable, 24 hour concentration, is $150 \mu\text{g}/\text{m}^3$. Additionally, the background concentrations as determined by PEDCO for southern Nevada scrub of $25\text{-}30 \mu\text{g}/\text{m}^3$ substantially assures that violations can occur. If vehicle speed is ^{maintained} below 15 mph, the ambient air quality standard is not exceeded, but if the vehicle

speed is 40 mph or greater the ambient air quality standard is exceeded by a factor of 1.3.

It seems that, since this is a race, the vehicle speed would be greater than the 40 mph used in the calculation. The race would cause a violation of the state ambient air quality standards, which were adopted to protect both human health and safety and to reserve visibility and scenic, aesthetic and historic values of the state.

4. We would like to take exception to the statement regarding noise on page II-14, that "...an open desert environment free of structures will tend to dissipate sound levels more readily than a structurally dense urban area." The implication is that it is much better to make a noise in the desert, whereas in reality it is better for receptors to have "barriers" between them and the source, since the intensity is diminished by the shielding effect provided by the structures.
5. We would like a fuller explanation of the reasoning why no trash receptacles are needed, as the environmental statement merely states that "this action is in keeping with the historical behavior of participants and spectators in the Barstow - Las Vegas race." (page IV-4).

It is further noted that the draft environmental statement seems to address itself much more to the impacts of the California portion of the proposed routing than the Nevada portion. Perhaps the effects on the Nevada portion will be similar to the effects in California, or perhaps the authors feel that Nevada is relatively less important in relation to California.

Also, on page IV-4, it indicates that cleanup is conducted on the following weekend by club members, utilizing four-wheel drive vehicles, dune buggies and

motorcycles for transportation, but the EIS does not cover the environmental effect of those vehicles.

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Nevada State Clearinghouse, via telephone October 11, 1974

The final environmental statement, as is pointed out repeatedly in the description of the proposal, assesses the environmental impacts of a single motorcycle race - the Barstow-Las Vegas race - proposed to be held on November 30, 1974. Other proposed races will be analyzed in accordance with Bureau of Land Management procedures to determine whether environmental statements should be prepared. The decision facing the Bureau at this time is on the issuance of a Special Land Use Permit for this particular race.

The data on particulate emissions, supplied by the Nevada Bureau of Environmental Health, has been incorporated in the Impacts section of the final environmental statement. The data was expanded to project dust emission quantities on the California portion of the course. Course speeds range from almost 0 mph on portions of the course to 100+ mph on relatively straight graded surfaces. The State of Nevada's estimate of 40 mph is a useful average speed approximation.

The statement on noise attenuation in desert versus closed urban environments was incorrect as it was presented in the draft environmental statement. The final statement has been corrected.

In Section IV B.3, the environmental statement discusses sanitation and cleanup measures that will be imposed as part of the mitigation required. Other types of trash receptacles are not needed, because litter bags will be used.

The effects of the proposed race in Nevada are expected to be similar to those in California. No bias against the State of Nevada was intended. Nevada residents participated in preparation of the draft statement and a considerable amount of time was spent in evaluation of environmental impacts on the Nevada portion of the course.

The impact of the few vehicles used in the cleanup phase of the operation is considered negligible.

Office of the County Administrator

CLARK COUNTY COURTHOUSE
LAS VEGAS, NEVADA

COMMISSIONERS

TOM WIESNER
CHAIRMAN

JACK R. PETITTI
VICE-CHAIRMAN

ROBERT N. BROADBENT
MYRON E. LEAVITT
R. J. "DICK" RONZONE
JAMES G. RYAN
AARON WILLIAMS

DAVID B. HENRY
COUNTY ADMINISTRATOR
Phone: 386-4011

To	Initial	Date
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Action By _____

Return to _____

October 9, 1974

Mr. J. R. Penny
State Director
Bureau of Land Management
Federal Office Building, Room E-2841
2800 Cottage Way
Sacramento, California 95825

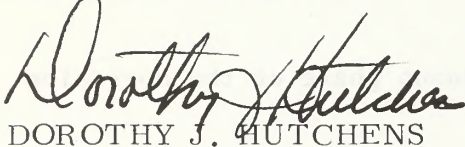
SUBJECT: 1792 (CAL) C-911.4 - MOTORCYCLE RACE

Dear Mr. Penny:

Enclosed for your review, are the comments from the Las Vegas Metropolitan Police Department on the proposed Barstow to Las Vegas Motorcycle Race.

If we may be of any further assistance, please contact us.

FOR THE COUNTY ADMINISTRATOR,
DAVID B. HENRY



DOROTHY J. HUTCHENS
Executive Assistant

DJH/jd
encl.



RECEIVED
Las Vegas Metropolitan Police Department

400 EAST STEWART AVENUE
LAS VEGAS, NEVADA 89101 17 PM '74
PHONE 702/385-4711

OCTOBER 4, 1974
COUNTY REFERENCE
ADMINISTRATOR

TO : DAVE HENRY, COUNTY ADMINISTRATOR

SUBJECT : PROPOSED BARSTOW TO LAS VEGAS MOTORCYCLE RACE

Reference the proposed motorcycle race November 30, 1974, this will be approximately the third year that this race has been held. There were problems with the first race due to the fact they did not get proper clearance ahead of time, however, these problems have since been resolved.

This Department does not oppose the holding of the race as long as it follows the proposed route. Our only opposition would be to any parking or concession areas coming to the edge of the Blue Diamond Road. All race activities should be well south of this roadway in order to prevent crowd and traffic problems. We have emphasized this point with the race officials in the past.

Paul Ray

PAUL RAY, DEPUTY CHIEF
UNIFORM FIELD SERVICES DIVISION

PR:lh



RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Clark County, Office of the County Administrator

The County Administrator forwarded a letter from the Las Vegas Metropolitan Police Department. The department indicated that it did not oppose the proposal as long as it followed the proposed route.

Comments from Clark County Planning Department

(via telephone 2:30 p.m., Tuesday, October 15, 1974)

Mr. Jay Downey, Director of Planning for Clark County, Nevada, indicates that the race sponsors must have a use permit from the County Board of Supervisors for the finish area at Blue Diamond Interchange. No application for a use permit has yet been submitted. Because of its proximity to the urban Las Vegas area, the Planning Commission would probably oppose issuance of the use permit. The Planning Department would prefer the race finish farther south of Las Vegas in the Jean Lake area. However, this would still require a use permit.

The permit application must be acted upon by both the Planning Commission and Board of Supervisors. Following this process, the Board of Supervisors could not act on the permit application until November 20, 1974. However, the applicant might contact the Board directly and try to get them to act without first going to the Planning Commission. If they were willing to go this route, the Board could act on the application at its November 5 meeting.

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Clark County Planning Department

The sponsors of the proposed race are responsible for obtaining use permits from the local units of government as applicable. Therefore, we will forward this information to them for their action.



CLARK COUNTY
DEPARTMENT OF PUBLIC WORKS

COURTHOUSE ANNEX

LAS VEGAS, NEVADA 89101

GEORGE C. MONAHAN
Director of Public Works

RECEIVED
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CALIF. STATE OFFICE
SACRAMENTO, CALIF.

October 3, 1974

Mr. J.R. Penny
State Director
Bureau of Land Management
Federal Office Building, Room E-2841
2800 Cottage Way
Sacramento, California 95825

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1792 (CAL) C-911.4 - MOTORCYCLE RACE

The only recommendation this office would have regarding the subject motorcycle race from Yermo, California to Las Vegas, Nevada is that the motorcycle associations involved be required to furnish a bond or some form of guarantee that the start and finish lines, as well as the pit areas, will be properly policed.

DIVISION OF ENVIRONMENTAL
PROTECTION & BEAUTIFICATION

JAMES J. BALK
Director

JJB:lw
cc: D.B. Henry

CLARK COUNTY
RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)



Comments from: Clark County, Dept. of Public Works, letter of October 3, 1974

The recommendations made by the Clark County Department of Public Works are included in the Draft Statement as mitigating measures, Section IV B., pp. IV-2 through IV-6. This will be carried forward to the final Environmental Impact Statement.

DIVISION OF ENVIRONMENTAL
PROTECTION & RECREATION

WILLIAM C. BARR
Director

435.10
W.C. Barr

Telephone:
(714) 383-1661

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ATTENTION: J.R. Penny
State Director

The San Bernardino County Air Pollution Control District has reviewed your draft EIR statement for the proposed motorcycle race between Yermo, California and Las Vegas, Nevada on November 30, 1974. The following comments are made on the specific sections of the report.

The report adequately covers the air quality that exists in the desert air basin where the race will be run. The paragraph addressing the potential vehicle emissions states that there is a possibility of lingering of air pollutants and that this is dependent upon an inversion layer. The data available indicates that the inversion possibilities are small and if they do occur, they would be light and of short duration.

The Air Pollution Control District has received many complaints concerning the dust plume which occurs from this race and the subsequent dust storms that are available from this area due to the disturbance of the desert surface. In your section on surface hazard, the fact that these surfaces have been disturbed by previous races of this type was not addressed.

The six areas where the specific soil impact will occur encompasses a large number of acres, which will subsequently result in a significant land area which would enhance wind erosion problems.

United States Department of the Interior
Page Two
October 2, 1974

Could the staging areas, gas stop areas and finish areas be wet down approximately an hour or so before use, such that it would assist in a rapid buildup of the desert surface crust?

Section VIII

The District agrees with the comments made on the rejection of the application and supports this alternative.

The District, as previously mentioned, has received many adverse comments from desert residents of the dust problem caused by this race; and the majority of the complaints would like to see the race stopped. The race does provide recreation but only for a limited number of people, while affecting a large number of people. The District has also received comments from persons using the desert for recreation but who are concerned with the environment and apall the destruction or disturbance of any large area, as would be done in this race. Some suggestions that have been received by the District are that the Bureau of Land Management set up specific areas in the desert where the motorcycle enthusiasts can race but over a confined area and, subsequently, restrict their use on the rest of the desert lands.

From the aspects of the particulate matter problem that occurs during the race and the long-term problem occurring from breaking of the desert surface which enhances wind-blown particulate matter, the District requests that the Bureau of Land Management reject the application to hold the race.

Very truly yours,

DONALD M. THOMAS
Air Pollution Control Officer

By:


ROBERT J. HILOVSKY, P.E.
Senior Engineer

DMT:RJH:mmm

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: San Bernardino Co. Air Pollution Control District
letter of October 2, 1974

The body of this report has been revised in response to your letter. See Sections II-A-6 and III-A-4.

Sections II-A-6 and III-A-4 on Air have been revised as the result of new information received from Nevada Department of Human Resources Division of Health, Bureau of Environmental Health.

Last sentence of para. 2, II-A-6 should be addressed.

Last sentence of para. 2, III-A-4 should also be addressed.

We will require that the spectator entry roads be watered. Watering other areas was not recommended because of the possible surface destruction of the heavy trucks off normal road surfaces.



American Motorcycle Association

P.O. Box 141, Westerville, Ohio 43081

Telephone 614/ 891-2425

October 7, 1974

Telex: 245 392

Mr. J. R. Penny
State Director
Bureau of Land Management
United States Department
of the Interior
2800 Cottage Way
Room E-2841
Sacramento, California 95825

Dear Mr. Penny:

On behalf of the American Motorcycle Association, the sanctioning body for the proposed Barstow to Las Vegas Hare and Hound Motorcycle Race, and on behalf of our member motorcycle club, the San Gabriel Valley Motorcycle Club, we would like to offer the following comments to the Draft Environmental Impact Statement for that event;

1. Section I. B. - As described in this section of the EIS the persons participating in this event, as participants or spectators, are basically family oriented and will be sharing recreational activities centered around this event over the Thanksgiving weekend. As pointed out in the description of the event the hidden and unannounced "check-points" along the course are intended to insure that the participants in the event stay on the designated race course.

2. Section I. D. - Of the 132 miles of the course contained on federal lands the portion of the race proposed to be run in California crosses four areas which have already been designated by the Bureau of Land Management for vehicle use under its Interim Critical Management Program for Recreational Use on the California Desert. Specifically, the starting area and the first 55 miles of the course are contained in the Mohave Basin Special Design Area which was designated by the Bureau as a competitive event area. Approximately five acres of the course between Kelbaker Road and I-15 crosses over the area designated by the Bureau for designated roads and trails, the Eastern Mohave Designated Road and Trails Use Area. After this point the course is entirely contained within

an Existing Road and Trails Use Area until arriving at the Ivanpah Valley Special Design Use Area. Ten miles of the course are contained in this area designated for competitive use. From this point the course continues into Nevada which is not subject to the Interim Critical Management Program. However, the remainder of the course in the State of Nevada also utilizes existing roads and trails. As it is pointed out in the EIS "the entire course is held to existing roads and trails as defined in the Interim Critical Management Program for Recreational Vehicle Use on the California Desert." By being so designed the course thus holds to a minimum and avoids the impacting of any new areas not previously used or designated for vehicle use.

3. Section II. A. 1. - Eighty Five percent of the course utilizes terrain with a course gradient between 0 and 15%, 65% of the course utilizing terrain with a course gradient less than 10%. Use of this relatively flat terrain will hold erosion to a minimum, especially given the sparse rainfall in the area.

4. Section II. A. 2. - The amount of rainfall in the past has had negligible visible runoff or erosion and even the Playas have apparently supported the weight of motorcycles without excessive rutting.

5. Section II. A. 5. - In addition to the comments above concerning erosion, the fact that the course traverses existing roads and trails also minimizes the possibilities of damaging or compacting the soil.

6. Section II. A. 6. - As summarized in Section V. D. 1. (page V-4) "overall increase of gaseous matter within the air basins will be insignificant."

7. Section II. A. (b) - While the event will involve some dust, as concluded in V. D. 2. the dust and blow sand conditions created along certain segments of the course will be of a local nature and have little effect on the level of suspended particulate matter within the air basins. The impact on the air at I-15 freeway crossing could be temporarily significant. Such temporary significant conditions are a potential at any time and are something for which the average motorist is alert.

8. Section II. A. 6. (e) - The alignment of the mountain ranges in relation to the course, as the EIS points out, presents a rough surface to westerly winds and impedes air movement which will hold down movement of dust and minimize erosion.

9. Section II. A. 7. - While "silence is a resource," silence is also renewable. As soon as invading noise generator passes, the "sounds of silence" will return. Given the character of the course, utilizing existing roads and trails, its containment within a sonic boom corridor, its nearness to the freeway, and in consideration of powerlines, etc., as regards this particular course, solitude and the pristine aspect may be overemphasized in the EIS. In either event, the race rules and the rules of the American Motorcycle Association require that all machines entered be muffled to meet a sound level of 92dbA. This is also in accordance with "Special Use Condition #15. Utilizing the formula contained in the EIS on page II-14, the noise level of the event will decrease to 70dbA at 1600 feet from the course. As pointed out on page II-69, at its nearest point the course passes within 1.5 miles of an unoccupied area. At that distance the noise level will be less than 58dbA. Given the muffling of the machines and the diminution of sound, we demand that the adjective "deafening" as found on page II-14 be removed. With the existence of these two conditions it cannot be implied that the motorcycles involved in the event will actually cause deafness.

10. Section II. B. - As you are aware, it is the position of the American Motorcycle Association that motorcycle use on public lands should be correctly managed. Correct management should insure that such activity does not adversely affect previously undisturbed habitat. We think it is vitally important here that through various types of habitat described on pages II-15 through II-55, the course uses existing roads and trails or areas already designated for such vehicle use by the Bureau of Land Management and its Interim Critical Management Program for Recreational Use.

As regards the Crucifixion Thorn Community described on page II-55, we are advised that the San Gabriel Valley Motorcycle Club has suggested to the Bureau that the course be rerouted so as to avoid this area. We would concur in this suggestion.

Generally as regards these specific types of habitat described in this section; most of them have received past motorcycle and off-road vehicle use, have been designated by the BLM for that use, due to their nature restrict ORV use to road and trails, contain certain species of wildlife that are the subject of consumption recreation like hunting, and have previously been utilized by mankind for mining and other activities.

11. Section II. C. - As pointed out in this section, "recreationists regard the desert as a beautiful place." "Recreationists" include motorcyclists and even while engaged in a speed event, such as the Barstow to Vegas motorcycle race, participants will have an opportunity to experience the beauty of the desert. As pointed out by the EIS there is little quantitative information available as to the number of persons involved in other activities in the desert along the race course. Of course, the Bureau has extensive quantitative information as to the number of motorcycle recreationists who utilize the desert and is well aware that such use comprises the largest single user group. On the date of the event 10 to 15 thousand persons will be enjoying recreation in an area designated for such use, and though the event will occupy 7500 acres of such area, 10,000 plus square miles of the desert will be available on that date for other activities. In fact, it is interesting to note that the other activities enumerated in this section, including camping and picnicking, are unmanaged and could occur in any section of the desert regardless of its habitat, wildlife population, or whether or not it was a unique or special recreational area. The event, compared to such free and unmanaged use, will be subject to the conditions of the Special Land Use Permit and will be contained on already existing or designated roads and trails.

12. Section II. C. 3. - The containment of the course and the thoroughness with which it has been laid out by the San Gabriel Valley Motorcycle Club in conjunction and cooperation with the Bureau, eliminates or minimizes to the point of elimination adverse impacts to cultural sights along its route. For example, the closest recorded sites in the Soda Lake through Clark Mountain section are a minimum of a mile from the course.

13. Section II. C. 4. - Generally the human population along the course, as the EIS points out, is of a very low density. There are no dwelling units within more than a mile on either side of the proposed course. The start of the race, near Barstow, is important to that city as a portion of its tourism business. The same benefits occur to the town of Baker. Similar benefits are experienced by the gas stations and motels along the route and of course culminate at the end of the race in Las Vegas, Nevada.

14. Section II. D. - The race course or the event itself does not have any adverse impact on other uses of the course nor deprive any portions of that course from other use.

15. Section III. A. 1. - As the EIS points out, the impact of the race on the topography of the course will be a secondary and have a relatively micro-cosmic effect.

16. Section III. A. 2. - The race will have no direct impact on water supplies. Again the correct planning by the club and the Bureau is evident here as the course is not charted through or near existing sources of water that are put to beneficial uses. In this connection impact increasing the geological process and any possibility of degradation of ground water supplies are both estimated to be negligible.

17. Section III. A. 3. - As is pointed out in previous sections of the EIS, and our comments, the effect of the event upon soils is minimized by the fact that the course is comprised of areas previously utilized. Concerning the pickup of persons potentially injured in the event, it is the intention of the club and Rescue 3 to utilize existing roads and trails for pickup of such injuries except where such pickup is absolutely impossible.

18. Section III. A. 4. - Overall increase in gaseous matters within the air basins will be insignificant. It is also pointed out by this section that the dust and blow sand conditions will tend to be of a local nature and have little effect on the level of suspended particulate matter within the air basins and even the impact on the area at the I-15 freeway crossing will be only temporarily significant.

19. Section III. 3. - "Six areas of specific soil impact will occur." As pointed out in this description of specific soil impact, the large majority of the course and areas used in conjunction with it have already been impacted. Of the 433 acres expected by the EIS to receive additional impact, only 60 acres are considered by the EIS to have high susceptibility to compaction.

20. Section III. A. 5. - Our comments above concerning noise are apt here. It should be pointed out that the statement in this section that the "noise level generated by the motorcycles is approximately 10 million times greater than that experienced by a person in a quiet suburban residential area," makes the basic incorrect assumption that all motorcycles entered in the event will be traversing each point along the course at the same time. In the description of the event the EIS reveals that the number

of riders decrease as the event progresses with a corresponding decrease in the sound level.

21. Section III. A. 5. (e) - We again demand that the word "deafening" be removed from this section and any other section contained in the EIS using that adjective to describe motorcycle noise.

22. Section III. B. 1. - As regards the impact on wildlife habitat, it is critical to keep in mind, as the EIS indicates, that the majority of the race course utilizes existing roads and trails, or areas specially designated for vehicle use by the Bureau. Given this designation and given the prior use of those areas, it is obvious that the event will minimally adversely affect habitat of wildlife. Wildlife will not have utilized the existing roads and trails and areas already impacted as their habitat.

As pointed out in Table III-B-1 the estimated impact on rare wild flowers predominantly ranges from low to medium.

23. Section III. B. 2. - Statements contained in this paragraph as to the three generalizations concerning the increasing of impact as the number of motorcycles and other vehicles increase is true for whatever type activity. Again, the critical factor minimizing the impact on vegetation is the character of the course itself.

24. Section III. B. 3. - In connection with impact on wildlife, the precautions taken under mitigation measures and the nature of the course will hold this to a minimum. Animals which are fairly mobile will evacuate as the first racer approaches and stay away until solitude returns. Since breeding season is not in progress there is less possibility of impact to nests or burrows. Also given the nature of the course it is highly unlikely that it would be used for such activities.

In specific regard to the discussion of noise in this section we would point out that the Miller Study is not completely applicable as that study exposed rats to 115dbA for eight hours. We would admit that with the muffling of the machines and the manner in which they will pass any given area causing a rise and fall in sound levels, that the sound level along the race course will not be of that magnitude for that sustained period of time. In fact, we would say that 115dbA is considerably inflated.

Our comments concerning the impact on wildlife habitats contained above are applicable here and the minimal adverse effect upon wildlife habitats is attributable to proper planning of the event by the club and the Bureau of Land Management.

25. Section III. C. 1. - As pointed out in the aesthetic impact evaluation of the sixteen segments, the expected additional ORV impact is predominantly low. As revealed by the photographs and descriptions of the various sections the segments are not virginal pristine areas of aesthetic beauty but are in fact intruded upon by powerlines, freeways and other roads, and mining and grazing activities.

Our comments concerning our understanding as to the avoiding of the Pachalka Gardens should be restated here as we are told that the area has been recommended by the club to be avoided.

26. Section III. C. 2. - As we stated above in our comments concerning recreation in Section II. C. 2., the actual amount of acreage utilized by the course and the event is insignificant when compared to the amount of acreage available for other types of activities as enumerated in this section during the Thanksgiving weekend. For future environmental impact statements we would think that it would be of significance to include in a table, such as Table III. C. 3., the attitudinal conflicts and physical conflicts that trailbikers and off-road motorcyclists experience as regarding other types of activities. Such information would certainly be of value to land-use planners in reconciling actual or imagined user group conflicts.

27. Section III. C. 3. - As revealed by the EIS, the proposed motorcycle event will not cause any change in the quality of the archeological or historical character of the four areas which might be eligible for nomination on the National Register of Historic Places.

As set out in Sub-section (c) of this section the large majority of specific impacts are negligible or insignificant.

28. Section III. C. 4. - As indicated above the race course is not in close proximity to any major towns or settlements and there are no forms of human habitation which will receive direct impact from the noise of the race. In fact, the effects upon the human population are adequately summarized by the EIS in this section, "in general the primary impacts of the proposed race on

the potentially effected human population are low."

In contradistinction to the low primary impact, as explained in Sub-section (b) of this section, the beneficial economic impacts upon the neighboring communities are substantial. Not only do these communities receive financial returns but, as expressed in Sub-section (c) the participants and spectators are considered to be well mannered, family oriented and a safety conscious group. As the reports of contacts with the various police authorities along the route show there are no significant police problems in association with the event. In fact, the strong public sentiment for this event felt in Barstow seems to testify to its welcome in the area.

29. Section III. D. 1 & 2 - The event has no substantial adverse impact upon other uses of private lands.

30. Section IV. A. 3. - The American Motorcycle Association has long emphasized the need for correct monitoring of off-road vehicle and other outdoor recreation use. We would suggest that in the environmental sampling plots it is not sufficient to just examine and photograph these areas before and immediately after the race, but it is also necessary to monitor them at periods of six months, one year, and longer, so as to establish a timed picture of long-term effects.

31. Section IV. B. - The specific conditions of the Special Land Use Permit are further assurance that the race will have minimum adverse impact of any kind, and that the conditions to assure this will be fulfilled. As explained in Sub-section 2 of this section there will be adequate course marshalls and controls to see that the participants stay on the designated course.

It is encouraging and interesting to note in Sub-section 3 of this section the historical behavior of participants and spectators of the Barstow to Las Vegas race eliminate the necessity to even provide trash receptacles due to their good non-litter habits.

32. Section IV. - In general the fact that a Special Land Use Permit and its requirements contain the large majority of mitigating measures is testimony to the fact that this event, the worlds largest in the number of participants for motorcycles, has been more than adequately planned by the club and more than adequately studied by the Bureau. The event, its planning, and its taking place, will bear testimony to the fact that events

such as this can be run with a maximum derivation of user and spectator enjoyment and a corresponding minimum adverse impact upon any facet of the environment.

33. Section V. B. - The race will have no direct impact on water supplies.

34. Section V. C. - As stated above in our comments to this topic, when it was discussed in Section III. A. 3., the impact to soil is definitely minimized by the nature of the race course itself and any additional impact is minimal.

35. Section V. D. - The overall increase of gaseous matter within the air basins will be insignificant. As regards Sub-section 2 of this section the dust and blow sand conditions which might be created along certain segments of the course will be of a local nature and have little effect upon the level of suspended particulate matter within the air basins and the impact upon the air at I-15 freeway crossings will be only potentially temporarily significant.

36. Section V. E. 1. - Our comments concerning the noise on the race course as contained in Section III. A. 5. are applicable here. In addition to those specific comments our comments concerning noise and solitude are also apt in regards to this section and the following Sub-sections, 2, 3, 4, and 5.

37. Section V. F. - We cannot agree that the "proposed mitigation will not significantly reduce the impacts of this action on the living components of the environment." The conditions of SLUP, the routing of the race course, and its containment to existing roads and trails, greatly mitigate and reduce the impacts of this action on the living components of the environment and this fact should be more than latently recognized. This situation has direct bearing upon discussions of impacts on vegetation and wildlife and our comments on these two subjects contained above should be sufficient here.

In summary of impacts (page V-12) it is estimated that 478 acres will be adversely impacted from the proposed event in addition to the previous impacts. While the American Motorcycle Association is deeply concerned with preserving the character of the desert environment and of minimizing adverse effect on the environment

from the race, we are also concerned with providing recreational sporting activities for participants and spectators. It would be appropriate here to make the statement that "there is no such thing as a recreational free lunch." As is the case with every action of humans upon this earth, there will be effects upon the environment from this motorcycle race, just as there are effects upon the environment from every human activity. It is the purpose of the American Motorcycle Association and the San Gabriel Valley Motorcycle Club, in working with the Bureau in regards to this event, that such effects do not become "damage."

38. Section V. G. 4. - Again, though this event will potentially cause conflicts with other potential users of the race course and related areas, these conflicts will only apply to those specific areas and the users of other persuasions and interests are certainly free to utilize the remainder of the 12,000,000 acres of Bureau administered public land.

39. Section VI. - As pointed out in the first paragraph of this section, the benefit to participants and spectators from the event is not limited just to the day of the event. This section also discusses the "productivity" of the environment and we would point out here that the effected 7500 acres is contained and spread over 155 miles. This 7500 acres is "producing" an unbelievably large amount of enjoyment for a substantial number of people. In addition, the race and its attendant's actions will produce only momentary intrusion, noise, fumes, and dust, and will not significantly effect the long-term productivity of the environment. Given the nature of the course itself, the planning which has gone into the event and the mitigating circumstances, all which tend to protect and prevent destruction and loss to the cultural resource values, we cannot see that running of this event will result in a total destruction and loss of those values. We also cannot agree that the running of the proposed race will result in a loss or deterioration of all of the natural, cultural, and aesthetic values which can be passed on to future generations in the 7500 acres involved, and we would say that in fact the recreational use of those acres is being utilized to the fullest. Also as regards the land affected by the event, it is inappropriate, given the description and photographs in the EIS, to describe it as "wild" as if to imply that it were previously completely unaffected wilderness.

Mr. J. R. Penny
October 7, 1974
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40. Section VII. - Given the statements of the EIS concerning erosion, soil types, and weather conditions we could not see how the "proposed event would result in permanent loss of soil by wind and water erosion." If such loss does occur we would submit that given the statements of the EIS such loss would be insignificant.

41. Section VIII. - Considering the amount of detailed preparation and planning by the San Gabriel Valley Motorcycle Club and the stringent conditions placed upon it for the holding of this event by the Bureau, we cannot believe that the alternative of not granting the SLUP is even available. This detailed planning and requirements insure that the event can be held with a minimum adverse effect upon the environment and testifies to the fact that such events can be held without adversely or irretrievably affecting the environment.

It goes without saying that with 15,000 persons involved one way or the other with the event, and the fact that those persons will have been planning for the event for some time, if this permit was denied there would be a great deal of disappointment. However, we feel that the statements of the EIS concerning a possible violent confrontation between the Bureau officials and would-be racers are exaggerated and inconsiderate of the responsible social characteristics of cyclists as described in the EIS.

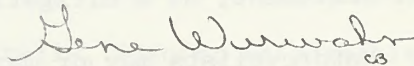
42. Section VIII. E. & C. - We have commented on several places concerning the alternative routes and changes in the course and the sponsoring club will of course continue to cooperate with the Bureau in making such changes as are necessary to achieve the long-range goal of allowing this type of recreation activity while minimizing its adverse effects upon the environment.

In summary, the very nature and layout of an environmental impact statement makes a cogent flowing comment impossible. However, we hope that in our above comments we have pointed out our agreement by and large with the environmental impact statement and made clear our reasons for disagreement. We feel that in the main the environmental impact statement testifies to the fact that with proper management by land management and cooperation by responsible sportsmen and recreationists, such as members

Mr. J. R. Penny
October 7, 1974
Page 12

of the San Gabriel Valley Motorcycle Club and the American Motorcycle Association, such events as the proposed Barstow to Vegas motorcycle event can continue to occur without substantially or permanently adversely affecting the environment or depriving future generations of the opportunity to enjoy our vast desert resources regardless of their type of interest or persuasion.

Sincerely yours,



Gene Wirwahn
Legislative Director

GW/cb

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: American Motorcycle Assn., letter of October 7, 1974

Item 9. We have eliminated the word "deafening" as suggested. The noise level generated by a single motorcycle is approximately 10,000,000 times that ambient in a quiet suburban residential area.

Item 10, paragraph 2 refers to mitigation of potential impact upon the crucifixion thorn plant community. As suggested, a routing of the race trail around the crucifixion thorn community appears in Section IV of the final statement, as a mitigating measure.

Item 11. Motorcyclists may or may not constitute the largest single user group on the California Desert. On-road "Driving for Pleasure" in conjunction with desert sightseeing may well be the most significant user group in terms of total numbers.

There are rules and regulations and in some instances laws governing phases of many recreation activities in the California Desert including nonmotorcycle vehicular use, rockhounding, hunting, and shooting, land sailing, and model rocket launching. Any recreation group in excess of 25 people is required to obtain a special land use permit.

The BLM is endeavoring to manage unique and valuable desert resources for their inherent values. Such management may at times conflict with a variety of other recreation activities in addition to motorcycle use.

Item 14. Recreational conflicts as a result of the race have been identified in detail in Section III-C.

Item 17 refers to evacuation of injured riders. After interview with Rescue 3 personnel, a more accurate description of rescue procedures appears in Section III of the final statement.

Item 18,35. Data from the Nevada Department of Human Resources, Division of Health, Bureau of Environmental Health indicate that the generation of airborne particulate matter will significantly exceed the minimum air quality standards for Nevada, California and the Federal government. The final EIS has been altered to reflect their suggestions.

Item 19 refers to soil impacts. The observation is accurate. A high compaction susceptibility is found on an estimated 60 acres along the racecourse.

Item 22. The racecourse covers roads, trails and washes. Out of the approximately 155 miles of course, about 116 miles are on trails and 28 miles in washes. Roads are used for about 11 miles and represent a small percentage of the course total. Impacts on wildlife and wildlife habitat are the least on roads. On trails and in washes impacts vary considerably and may be low to high. Moderate to high impacts occur through widening of existing trails, compaction and deflation of soils, loss of

vegetation, and loss of wildlife habitat. Impact is high in pit areas; of the 7500 acres affected by the proposed action, 2240 acres are in pits. Therefore, the impacts of the event on wildlife and wildlife habitat are considered significant.

Certain wildlife species will utilize existing roads, trails, and disturbed washes for habitat. Burrows may be established on the berms of the road, on trail edges and throughout washes, especially where there are rocks, shrubs and litter. These areas will also be used for feeding (if there is food) and as portions of territories.

Table III-B-1 describes estimated impact of the event on rare plants in the 14 habitats traversed by the course. Out of the 14 habitats, 4 may receive high impacts, 2 medium impacts, and 8 low impacts. Thus, over 40% of the habitats may receive medium to high impacts on rare plants.

Item 24. The use of existing roads and trails, insofar as possible, reduces somewhat the impact to wildlife. However, impacts will occur to wildlife on trails and in washes and these impacts cannot be mitigated.

Large animals such as bobcats, coyotes, rabbits, kit fox and some birds will leave the course area as the first racer approaches. However, the vast majority of species will not be able to do so. The many species of rodents, lizards and snakes are either hibernating or are nocturnal and will be a few inches underground. See Section II-B-3 for a partial listing of these species. Section III-B-3 Losses to Animal Populations deals with the impact of the event on such animals within the race corridor. In short, burrows, underground nests, and nests in shrubs along the course will be disturbed and in many cases destroyed by the event. Some animals will be killed. In addition, certain sensitive species who leave the area at the start of the race will not return to the vicinity even after the event is finished. See Section III-B Summary of Impacts.

The studies cited on noise (Miller et al, 1963; Gibson, 1973) showed that there is hearing loss in certain laboratory animals exposed to 115dB continuously for 8 hours. Hearing loss still occurred but was less when the animals were exposed to similar levels for broken periods of time. See Section I-B for references on the duration of the race and Section II-A for a discussion of noise.

Item 25, paragraph 2 refers to impacts in the Pachalka Spring area. Two alternatives appear in the final statement which would route the contestants away from the high resource value areas around Colosseum Gorge and Pachalka Spring.

Item 30 We agree that environmental sampling points will be rechecked annually.

Item 37 refers to the effect of mitigation upon the living environment. The most significant factor in reducing impact upon the living environment is routing the course along existing race trails and pitting and camping in previously disturbed areas. Since the race sponsor was aware of this and applied accordingly, that factor does not appear as a mitigating measure. Since the remaining impact to the living environment cannot be avoided,

mitigation measures and alternatives are directed to allowing unavoidable impacts to occur only on those less fragile or less significant biological communities. These mitigating measures and alternatives are discussed in the final environmental impact statement.

THE DESERT PROTECTIVE COUNCIL, INC.

A NON-PROFIT ORGANIZATION



To safeguard for wise and reverent use by this and succeeding generations those desert areas of unique scenic, scientific, historical, spiritual and recreational value and to educate by all appropriate means children and adults to a better understanding of the desert.

BOX 4294 • PALM SPRINGS • CALIFORNIA 92262

October 7, 1974

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Mr. J. R. Penny, State Director
Bureau of Land Management
2800 Cottage Way - Room E-2841
Sacramento, California 95825

Dear Mr. Penny:

The Board of Directors at their September 28 regular meeting, after considering the enclosed Observations and Comments, ordered that the letter of transmittal emphasize that the Desert Protective Council is unalterably opposed to the running of this race.

Sincerely yours,

Arthur B. Johnson
Executive Director

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cc: Mr. Delmar D. Vail
District Manager
Riverside Office

President Glenn Vargas

OBSERVATIONS AND COMMENTS
of the
DESERT PROTECTIVE COUNCIL
on the
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
NOVEMBER 30, 1974

The Desert Protective Council opposes this race on the basis that the cumulative effects of the proposed land use can result in irretrievable impacts upon nonrenewable resources and create grave adverse effects upon so-called renewable resources, which in many instances approach the irretrievable, due to the simple fact that recovery can only take place over a span of many decades, if at all.

Nonrenewable resources are not limited to minerals and chemicals. The landscape itself, most of which is soil, is by far the most plentiful and the support of all desert life. Any disturbance of the surface, which leads to displacement or movement of the soil, can cause a serious deterioration to this nonrenewable desert resource.

Any deterioration of the quality and/or quantity of the soil brings about a corresponding reduction or elimination of the renewable resources of the plants, the insects, the rodents, the reptiles, the animals and the birds. A reduction or elimination of the wildlife reduces the attraction of the desert as a recreation-desirable-area for the vast majority of desert visitors. Plant and animal life is an attraction to many special purpose users, such as rock hounds, archaeologists, etc.

The Environmental Impact Statement states that area of influence of the race will embrace 7505 acres, of which 5265 are covered by the race course and 2240 are in the staging and pit stop areas. The E.I.S. also states that the race course has been damaged (impacted) by between 20% and 100%. A mean is 60%, or 3160 acres, not the 2015 acres claimed under paragraph f, Sheet III-3. The E.I.S. expects the eighth race to impact an additional 478 acres. Since part of the course is to be restricted to wash bottoms and existing roads or restricted width of intensive use (100% impact), the 3160 acres is a more realistic figure for impaction by seven previous races than the meager 2000 acres. Of the 2240 acres in the staging area and along the course pit stops areas, the E.I.S. assesses them as impacted or damaged from 80% to 100% for an average of 90%.

Applying the above, we arrive at 5265 acres 60% damaged or 3160

acres and 2240 acres 90% damaged or 2015. Summing up, we arrive at 5175 acres with serious to total damage to soil and plant life. Quoted in another unit we have 8 square miles of desert so damaged that there is little, if any, plant life left on most of those 8 square miles to support the rest of the wildlife ecosystem.

It is not the gentle rains that cause havoc. It is the terrain altering "cloudburst" type that turns the lug-tire-churned-soil into water courses that either wash away many plants lucky enough to survive the speeding vehicle or cover others with sand and soil lower down the terrain. The land and plant disturbance is not limited to the race course. It can be much more widespread. Also, the disturbance to the fauna is not limited by the destroyed plant life. Those that depend on the plants for life, which are not killed by the vehicles, will not just lie down and die because their food supply has disappeared. They will, in search of food, compete with the wildlife in adjacent areas. This ripple effect of the search for survival may be felt by wildlife several miles distant from the race course.

The Desert Protective Council maintains that this vast area is too great a sacrifice of the desert environment for the Roman circus enjoyment of even 20,000 spectators for one day. We say one day of enjoyment, for that extra day or so that some may stay is only spent to be able to "thrill" for a few hours of one day. The 3000 entrants are not there to "enjoy" the desert--that is the farthest from their minds. The few hundred man-days spent by the sponsors is not for "a desert outing."

At some time this progressive disturbance and impaction of such large areas of the soil and the destruction of its all important plant life must be stopped if we do not wish to deprive large numbers of visitors of a desert recreation experience. The Desert Protective Council feels that that time has arrived.

The Desert Protective Council suggests that some of the impact assessments can be misleading. A four-inch-wide tire track every three feet of course width might be said to impact only 11% of the area. However, the 12- to 16-inch width of the vehicle, driven at the speeds that they will be, can impact the plant life a foot or more high to 30 or more per cent. Since it is the plant life that

actually supports the ecosystem which in turns determines the environment, the Desert Protective Council maintains their higher assessment of total impact is more logical than any small figure.

The Desert Protective Council wishes to point out that some thinking of even learned persons and assumptions in the E.I.S. are, at least, questionable. The E.I.S. makes a point of the infrequency of "cloudburst" type rains. The Desert Protective Council submits that the rugged, often soil denuded, steeply sloping mountains terminating abruptly in a sudden change of slope into a detritus cone or fan or alluvial plane are not the product of gentle "winter" rains. They are the product of admittedly infrequent, heavy, long duration, general area storms and the "summer" season "cloudburst."

As for "cloudbursts" not being a winter occurrence, we submit the following: On January 1, 1935, after two days and one night of intermittent light rains in the desert and mountains east of Las Vegas, Nevada, between 2:00 and 3:00 P.M., ten miles southwest of Las Vegas, a 15-minute rainstorm crossed the highway (now I-15). The rain was so intense that a Model A Ford had to stop. The wind-driven rain beating against a vertical windshield of the roadster was driven upward and poured over its top in quantities to soak the feet of the two occupants. That storm was a general storm. A foot of water was pumped out of the "Rose Bowl" in Pasadena, California, that morning. Cajon Pass, fifty miles east, was closed by mud slides for nearly 12 hours during that day and the Mojave River at Barstow and Oro Grande flowed bankfull for many hours.

Additionally we point out the possible violations of the Clean Air Act and Endangered Species legislation.

The E.I.S. admits that, at several locations, large clouds of dust will be raised. The E.I.S. also admits these may be of possible danger to traffic on Interstate 15, but passes this off as a non-serious short time effect. The E.I.S. does not assess what the intermediate and long term effect that the fallout of the particulate matter may have on the plant and wildlife not directly impacted by the race. As pointed out above, residual side effects on plant and

wildlife can, and most likely will, to some extent, have an adverse effect over vast areas. Until scientific studies are made to evaluate these possible side effects, the Desert Protective Council strongly requests this application be denied.

The E.I.S. admits that Endangered Species of wildlife can and, in certain cases, will be further endangered by the vehicles running the course. To mention two: the Desert Tortoise and the Gila Monster. The tortoise will be endangered at several points and thus, to protect these, the race should not be run. The gila monster is generally isolated in the Clark Mountain area. To provide them better protection the race should not be routed close to Clark Mountain and especially through the vicinity of Pachalka Springs or Gardens. If the permit is allowed, for adequate protection of the gila monster and the archaeologic sites and cactus gardens at Pachalka Springs, the race should be routed through Keany Pass along the route that six of the previous races have been run and not greatly add to the inevitable impaction along a route that has been run only once.

Glenn Vargas
President

Arthur B. Johnson
Executive Director

October 7, 1974

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Desert Protective Council

Regarding the acreages used in assessing the estimated impacts, attention is directed to Table III-A-1 and the method used to make the estimates. The 60% cited in the comments is the midpoint in the area previously damaged. To compute additional impacts, the 40% not previously impacted must be used. These same mathematical projections are used to arrive at the 10% figure used on those more heavily impacted parts of the proposed course.

Regarding thunderstorm activity, records of the past 6 years show the highest intensity storm recorded along the route during the month of November was 1.1 inches of precipitation on November 16, 1972, recorded by the Mt. Pass, California, weather station. High intensity storms can occur during the month of November, however, the probability of such a storm is low.

Section III has been revised to include data on particulate matter. It is possible that airborne particulate matter may damage plants and animals. However, studies on quantitative and qualitative damage are not available.

There is only one species on the Federal Endangered Species List that occurs along the race course. This is the Peregrine Falcon. Potential habitat is available in the Solomon's Knob and Clark Mountain areas. However, there are no known nest or roosting sites along the race course. Habitat in the desert is considered peripheral for the Peregrine Falcon.

The desert tortoise and the gila monster are not designated as endangered by the Federal Government under the Endangered Species Act nor are on the California Department of Fish and Game list for rare and endangered species. However, both the gila monster and the desert tortoise are fully protected by Fish and Game codes and cannot be possessed without permit.

Two additional alternate routes that will bypass the Clark Mountain and Pachalka Gardens resource areas have been added to the statement in Section VIII. These will be considered with the others in the final draft of the impact statement.

HIGH DESERT ENVIRONMENTAL DEFENSE FUND

Post Office Box 1399 193

LUCERNE VALLEY, ~~BARSTOW~~, CALIFORNIA 92311 92356

CALIF. BUREAU OF LAND MANAGEMENT
SACRAMENTO, CALIF.

10/9/74

R. PENNY, STATE DIRECTOR
S. BUREAU OF LAND MANAGEMENT
10 COTTAGE WAY RM. E-2841
SACRAMENTO, CALIFORNIA 95825

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COMMENTS ON DRAFT ENVIRONMENTAL IMPACT STATEMENT - PROPOSED BARSTOW TO LAS VEGAS MOTORCYCLE RACE - 1974

MR. PENNY,

THESE COMMENTS WOULD HAVE BEEN SUBMITTED SOONER HAD THE HIGH DESERT ENVIRONMENTAL DEFENSE FUND RECEIVED A COPY OF THE EIS THROUGH BLM CHANNELS. WE WOULD HAVE APPRECIATED CONSULTATION DURING THE EIS'S EARLY STAGES. WE HAVE PREVIOUSLY WORKED CLOSELY WITH BLM ON MANY DESERT-USE ISSUES.

DURING THE WEEKEND OF OCTOBER 5 AND 6, THE FOLLOWING GROUP MADE A CURSORY STUDY OF THE ROUTE'S VULNERABLE PORTIONS:

KEASTVOLD, CHAIRMAN OF THE ROCK ART SUBCOMMITTEE OF THE CALIF. DESERT ARCHEOLOGY COMMITTEE OF THE SOCIETY FOR CALIFORNIA ARCHEOLOGY.

KE GASTON, CHAIRMAN OF THE SIERRA CLUB'S SOUTHERN CALIFORNIA REGIONAL CONSERVATION COMMITTEE'S DESERT SUB-COMMITTEE.

KE DODSON, CHAIRMAN OF THE SCRCC'S ORV SUB-COMMITTEE, AND REGIONAL VICE PRESIDENT OF THE CALIFORNIA ORV TASK FORCE FOR THE CLUB.

KE RGE BARNES, CHAIRMAN OF THE CALIFORNIA STATE ORV TASK FORCE.

KE L BARNES, DESERT WATCH COORDINATOR.

KE ID ESLINGER-, BIOLOGIST-ECOLOGIST.

KE RK NORRIS, GEOGRAPHER

KE LF, PRESIDENT OF THE HDEDF.

THE FOLLOWING COMMENTS RESULT FROM AN ANALYSIS OF THE EIS AND FROM THE ABOVE-MENTIONED CURSORY FIELD TRIP:

THE HDEDF COMMENDS THE BLM FOR COMPLYING WITH THE INTENT OF THE ENVIRONMENTAL PROCESS ESTABLISHED BY THE NATIONAL ENVIRONMENTAL POLICY ACT. THE EIS IS AN OUTSTANDING SOURCE OF INFORMATION BY ITSELF, AND A RATHER GOOD ANALYSIS OF SOME OF THE POTENTIAL ENVIRONMENTAL IMPACTS. ANY INADEQUACIES ARE PROBABLY DUE IN PART TO INEVITABLE PROBLEMS RELATED TO THE SCOPE OF THIS RACE IN NUMBERS OF VEHICLES AND IN POINTING DEGRADATION TO SUCH A VARIED AND LARGE AMOUNT OF VALUABLE EASTERN JOHUA VEGAS.

WE UNDERSTAND THE PRESSURES BEHIND USE OF PORTIONS OF THE DESERT FOR ORV ACTIVITY, BUT WE ARE DEFINITELY AGAINST ALL SUCH HIGHLY CONCENTRATED AND POTENTIALLY DAMAGING USES. WE OPPOSE THIS RACE BECAUSE OF ITS SHORT AND LONG TERM ENVIRONMENTAL DEGRADATION TO THOSE DESERT RESOURCES THE HDEDF WAS ESTABLISHED TO PROTECT. IN NO WAY WHATSOEVER IS THIS RACE A SENSIBLE UTILIZATION OF THE UNIQUE RESOURCE VALUE OF THE EASTERN DESERT. THE EIS ITSELF LISTS NUMEROUS IMPACTS OF SUCH HIGH DEGREES OF SEVERITY TO WARRANT IMPLEMENTATION OF THE ALTERNATIVE OF REFUSAL.

SOME OF THE ISSUES SUBSTANTIATING THE POSITION OF HDEDF ARE AS FOLLOWS:

THE RACE IS TOO LARGE AN EVENT FOR DESERT RESOURCES TO ADEQUATELY ABSORB THE RELATED IMPACTS. THE BLM INTERIM CRITICAL MANAGEMENT PLAN HAS NOT SUFFICIENTLY DEALT WITH SUCH CONCENTRATED ORV USES IN THE RESOURCE-RICH EASTERN MOJAVE DESERT, AND THEREFORE, SUCH RESOURCES AND IMPACTS ARE NOT ADEQUATELY INVENTORIED OR STUDIED. THE EIS, WHILE BEING A GOOD INFORMATIONAL DOCUMENT, IS LACKING IN RESOURCE INVENTORIES AND IMPACTS. THE HIGH SCOPE OF THE EVENT MAKES ANY ENVIRONMENTAL ANALYSIS EXTREMELY DIFFICULT.

THE RACE SHOULD DEFINITELY NOT BE RUN ON THE ROAD THAT LEADS TO THE PACHALKA SPRING PERIMETER DUE TO ADVERSE IMPACTS ON THE BIG HORN SHEEP IN THE ADJACENT "CLOSED" AREA OF CLARK MOUNTAIN, THE LOCALLY RARE GILA MONSTER, PETROGLYPH SITES WITHIN 20 FEET OF THE COURSE, A GREAT VARIETY OF PRIME CACTI, AND UNIQUE MIXTURES OF VEGETATION AND WILDLIFE IN GENERAL. CLARK MOUNTAIN CONTAINS GREAT BASIN ELEMENTS BLENDING WITH MOJAVE DESERT FLORA AND FAUNA ON AND ADJACENT TO THE COURSE. INDIRECT IMPACTS WOULD RESULT FROM THE INTRODUCTION OF ADDITIONAL VISITATIONS BY ORV ENTHUSIASTS. THE SPRING ITSELF IS ON PRIVATE LAND, AND THE OWNER AND THE PUBLIC DESERVE PROTECTION OF ITS INTEGRITY FOR DOMESTIC AND WILDLIFE USES. WE DISCOVERED THE LOSS OF A PETROGLYPH FROM A NEARBY SITE. BEFORE ANY FURTHER VISITATION OCCURS, THE SITE SHOULD BE BARRICADED FROM VEHICULAR ACCESS. AN EQUALLY CHALLENGING ALTERNATIVE ROUTE EXISTS ALONG THE EXISTING ROAD BETWEEN THE SPRING ROAD AND THE DWP TRANSMISSION LINE ROAD. IF THE RIDERS DO NOT WISH TO FOLLOW COLISEUM GORGE THEY COULD TURN NORTH ON A ROAD MIDWAY THROUGH THE NORTH SLOPE OF THE MOUNTAIN TO THE POWERLINE ROAD AND THEN TRAVEL EAST INTO IVANPAH VALLEY.

SPECTATOR IMPACTS ARE NOT WELL DEFINED FOR MOST LOCATIONS DESIGNATED FOR THAT USE.

THREE NEW ARCHAEOLOGICAL SITES WERE DISCOVERED ON OR DIRECTLY ADJACENT TO THE COURSE DURING THE FIELD TRIP. THESE SITES HAVE NOT BEEN ADDRESSED IN THE EIS AND WILL RECEIVE HEAVY IMPACT OR BE DESTROYED.

THE COURSE SHOULD DEFINITELY NOT RUN THROUGH OR EVEN PARALLEL THE PLAYA CONTAINING THE SMALL AND ONLY GROVE OF RARE CRUCIFIXION THORN IN THE NORTHERN MOJAVE. THE ENJOYMENT OF SUCH A RARE SPECIES CANNOT BE FULLY APPRECIATED IF THE SURROUNDING AREA IS ARTIFICIALLY DISTURBED. IF THE COURSE DOES NOT AVOID ONE OF THE EASTERN DESERT'S MOST UNIQUE AND SMALLEST PLANT COMMUNITIES, THEN THE BLM'S CREDIBILITY AND ENFORCEMENT POTENTIAL WILL BE PERMANENTLY ENDANGERED.

THE NUMBER OF ENTRIES SHOULD BE RELATIVE TO THE ABILITY OF THE ENVIRONMENTAL CONSTRAINTS TO ABSORB THE IMPACTS, NOT RELATIVE TO ADMINISTRATIVE CONVENIENCE OR HISTORICAL PROJECTIONS BY THE SPONSOR. THE ENTIRE CONCEPT OF DESERT PROTECTION REVOLVES AROUND THE PREMISE OF UTILIZING THE RESOURCES IN THE MOST ENVIRONMENTALLY EFFICIENT MANNER. THE DAYS OF JUST "USING" THE DESERT ARE OVER. WE HAVE NOT STUDIED THE COURSE SUFFICIENTLY TO RECOMMEND A DEFINITE NUMBER OF VEHICLES THAT COULD USE THE COURSE WITHOUT EXCEPTIONAL DISRUPTION, BUT THE 3000 FIGURE IS SO FOREIGN TO THAT PARTICULAR DESERT ENVIRONMENT, IT IS SIMPLY RIDICULOUS. WE ARE VERY DISAPPOINTED THAT THAT AMOUNT IS EVEN CONSIDERED. EVEN ASSUMING FEWER VEHICLES, AN ENDURO-STYLE RACE WOULD MORE SUITABLE THAN THE PRESENT PROPOSAL.

COPTERS SHOULD BE USED FOR ACCESS TO INJURED RIDERS, HASTENING THE TIME OF TREATMENT AND LESSENING THE POTENTIAL FOR ORV USE IN "VIRGIN" AREAS. SUCH EMERGENCY COSTS SHOULD BE ABSORBED BY THE SPONSORS.

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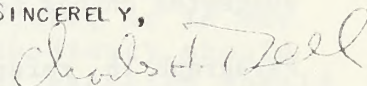
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WE APPRECIATE THE TIME AND EFFORT THE BLM HAS EXPENDED IN FORMULATING THE EIS.

SINCERELY,



CHARLES H. BELL, PRESIDENT

C. DELMAR VAIL, RIVERSIDE BLM
BILL MORTIMER, BARSTOW BLM
SUSAN L. MOORE, MBCA
SIERRA CLUB SCRCC INDIVIDUALS
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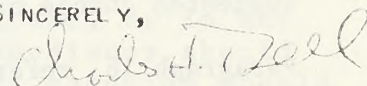
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RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: High Desert Environmental Defense Fund, letter of Oct. 9, 1974

Paragraphs 4 and 6 refer to resources and potential impacts in the Clark Mountain area. Two alternative routes bypassing that area are included in the alternatives section. They will be considered with the other proposed alternatives in the final impact statement.

Paragraph 5 refers to spectator impacts. Attention is directed to Section I, Part B, the Proposed Action beginning on page I-17. Acreage measurements in the impacts section, Section III, include expected impacts by spectators, pit riders and joy riding around the spectator areas.

Paragraph 7 refers to the crucifixion thorn community. A proposal to route the course clear of the site will appear as a mitigating measure in the final impact statement.

Paragraph 8 suggests the alternative of allowing an enduro event with less than 3,000 participants. This is not a viable alternative to the organization proposing to sponsor the event. Therefore, the Environmental Impact Statement can only be designed to assess the impacts of a Hare and Hound event.

Paragraph 9 refers to impacts resulting from the evacuation of injured riders. Attention is directed to Section III, Impacts Section, page III-2 where this need is addressed as a potential impact.

Paragraph 10 refers to the higher impact potential in the event of heavy rain immediately prior to the event. Attention is directed to Section II, page II-2 and Section III page III-3, where this factor is considered.

Paragraph 13 refers to the wilderness aspect of the north face of the dune saddle at Cronese Lake. This area is outside the area of influence of the proposed action.

Paragraph 15 suggests a change in wording on page IV-9, item 18. The suggested change has been made in the final impact statement.

Paragraph 16 refers again to the type of event being considered. See the response to paragraph 8.

Paragraph 17 refers to the issuance of permits and/or making statements on the behalf of the State of California by the Bureau of Land Management. The statement is entirely accurate.

National Wildlife Federation

N REGIONAL OFFICE
KFAIR DRIVE, SUITE 2
ENTO, CALIFORNIA 95825
ONE: 916 487-7869

October 10, 1974

To	Initial	Date
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Mr. Russell J. Penny, Director
Bureau of Land Management
Federal Office Bldg. Rm. 2841 E
2800 Cottage Way
Sacramento, Calif.

Dear Mr. Penny:

This letter is in response to the draft environmental statement on a proposed motorcycle race between Yermo, California and Las Vegas, Nevada, set for November 30, 1974.

I'd like to congratulate those on the staff who put this statement together. It is an excellent job.

The statement should have included, insofar as possible, an estimate of the amount of petroleum products used directly. Such an estimate should have included the gasoline and oil required for the motorcycles in the race, the motorcycles associated but not used in the race, for the vehicles that transported the motorcycles to the race and for all other unspecified gasoline requirements for the conduct of said race. Motor oil requirements should also be estimated. In order to understand these figures some imaginative comparisons to more essential fuel requirements would have been enlightening. Perhaps the energy agency of the Federal Government should have been consulted on this aspect of the proposed race.

Considering the time element, public relations and other practical factors there is ample reason to suggest that the 1974 permit for the race be granted, with a consequent suggested curtailment or alternative program to be developed for 1975 and thereafter. Rapid motion events that rely upon mechanized equipment and the use of fossil fuels may well be declared illegal in the future, or in any event greatly modified in nature. However, this expediency should not be relied upon as a sole factor. All government agencies should lead the way in conserving energy.

Sincere attempts should be made to continue an open channel of communication with those interest which receive monetary or aesthetic values from the traditional motorcycle race from Yermo to Las Vegas. Such dialogue may develop a plan that would greatly curtail the environmental damage undoubtedly created by these events as run in the past.

Sincerely,

William L. Reavley

William L. Reavley, Regional Executive Director

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: National Wildlife Federation, letter of October 10, 1974

Estimates of gasoline consumption have been made and are included in Sections VII and XI of this report.



RECEIVED
BUREAU OF LAND MANAGEMENT
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CALIF. STATE OFFICE
SACRAMENTO, CALIF.

27
5502 Markland Drive
Los Angeles, Ca. 90022
October 2, 1974

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Mr. J.R. Penny
State Director, BLM
Room E-2841 Federal Bldg.
2800 Cottage Way
Sacramento, Ca. 95823

EIR Review - Barstow-Las Vegas Race

Dear Mr. Penny:

As Chairmen of THE NATURE CONSERVANCY'S Edmund C. Jaeger Nature Sanctuary, of our own knowledge, and in accordance with the CONSERVANCY'S dedication to ecological principles, we submit the following observations and recommendations.

The State Office of the Bureau of Land Management is to be congratulated for the thoroughness of its inventory of the resources on the National Resource Lands along or immediately adjacent to the route of the proposed Barstow-Las Vegas motorcycle race to involve some 3000 participants and 10,000 spectators.

However, the EIR's inventory and analysis fails to take into full account a number of vital factors.

1. The total and widespread impact of increased and intensified ORV use prior to the race, the proliferation of ORV activity by those who cannot stand their own congestion, drop out, or "go it on their own" after the take-off or at some point along the way.
2. The seriousness of damage to the washes where plant and animal life potential lies unknown until the magic of desert rain.
3. The graveness of damage to vital, rare, or unique plants and animals and/or their habitats.
4. The permanent loss of archeological, cultural, and historic sites and remains.

Instead of allowing the Barstow-Las Vegas race to become "traditional", it and all events with such irreversible and irretrievable impact, must be prohibited.

For the Bureau of Land Management to do less would be in violation of the public trust and a number of laws, which include:

- a) The Endangered Species Act
- b) The Clean Air Act
- c) The Historic Preservation Act of 1964

Therefore, in behalf THE NATURE CONSERVANCY, we urge that permit for the Barstow-Las Vegas motorcycle race, be DENIED.

Sincerely,

Robert R. Elmerston

Bentley Edmiston

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: The Nature Conservancy letter of October 2, 1974

Item 1: Reference is made to the incidental ORV use related to the event in Section I, Description of the Proposal, part B, Proposed Action, page I-17 through I-18. The associated expected impacts are identified and assessed in Section III, Environmental Impacts, beginning on page III-3. The acreage of expected impact by incidental ORV use is included with the camp, staging and pit area acreage. These impacts are further discussed in Section V, Adverse Impacts That Cannot be Avoided.

Item 2: Attention is called to Section II, Description of the Living Environment, page II-18 through II-22, wherein the desert washes are considered important enough to be separated from the surrounding habitat and then further subdivided into 3 classes of desert wash habitat to insure the best possible identification of resource values. This distinction is carried forward to Section III, the Impacts Section, to assure the best possible assessment of potential impacts (see Table III-B-1).

Item 3: In Section II-B beginning on page II-15 of the Draft EIS, the plant communities involved are discussed in detail and the animals inhabiting those communities identified and discussed, including rare or unique plants and animals. These are again identified in the Impact sections and potential impacts assessed to the detail possible with the information available. (see Table III-B-2 on page III-12)

Item 4: Refer to section III-C-3 on page III-6F.



Southern California Chapter

P. O. Box 71106, Los Angeles, California 90071

Mr. Del Vail
Director, Bureau of Land Management
1414 University Place
Riverside, Ca. 92502

Dear Mr. Vail:

May I express for the board of the Southern California Chapter of The Nature Conservancy our strongest concern about the California-Nevada motorcycle meet and race proposed for the close of November.

Three thousand racers will wipe out life for some time to come along the proposed route, but in a sense one can imagine that the damage of this would in turn seem small compared to the catastrophic effect produced by the 10,000 spectators who are most certainly not sitting quietly in a viewing stand, but will themselves be housed in various cross country vehicles bent at the very least on sorties of their own and at the worst, shortcutting through the desert to intercept racers at various points along the way. The most concerned and well-intended directors of such an event can not possibly control the actions of any such collection of participants and spectators. The desert destruction will be beyond healing.

We hope that this desire for contest may be satisfied in some less destructive way. The desert is public property as desert. It is not the prerogative of any single group to turn it into a wasteland.

Sincerely,

Barbara Horton
Barbara Horton
vice-chairman

Oct. 6, 1974.

Del, a secretary telephoned about an Oct. 11 meeting at Riverside. I am unclear - is this the issue? She promised material which has not arrived. BH

Called & explained the meeting 10-9-74 Vail

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: The Nature Conservancy, Southern California Chapter,
letter of October 6, 1974

The impacts anticipated from 10,000 to 12,000 spectators is considered as a part of the total action. Reference is made to this aspect of the action throughout the Draft Environmental Impact Statement. These considerations will be carried through to the Final Environmental Impact Statement.



Natural History Museum Los Angeles County

September 30, 1974

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Mr. J. R. Penny, State Director
Bureau of Land Management
2800 Cottage Way Room E2841
Sacramento, California 95825

Dear Mr. Penny:

Action By _____
Return to _____

I have recently had the opportunity to examine the Draft Environmental Impact State^{ment} for the proposed Barstow to Las Vegas motorcycle race prepared by the BLM. I was favorably impressed with the general quality of the report considering the lack of time and staffing with the BLM.

One omission which concerns me is any statement on paleontology. We have already provided detailed data to the Riverside office (letter to N. Pfulb, October 15, 1973, copy enclosed) Area 1, Alvord Mountain, Area 25, Valley Wells and Area 27, Yermo Hills will all be potentially impacted. None are on the direct route to the race, but the Alvord and Yermo localities are within 1-2 miles of the staging area and the Valley Wells localities are directly across the road from parking for Pit Stop 2. Unless the BLM could provide sufficient regulatory personnel, I would suggest the upper end of Spanish Canyon, and two unnamed canyons to the east and the area east of the road at Valley Wells be closed to ORV use for the weekend.

! I would also take this opportunity to comment on the updating of the ICMP for the California Desert. Again, we have already provided data in the above mentioned letter. Recently, I have been working with the Bakersfield office, and their work seems to indicate that the data provided in 1973 have pretty much been ignored (see letter to L. Boll, August 26, 1974 enclosed). I would again encourage the BLM to take a more affirmative stand on the priceless vertebrate paleontologic resources of the Mojave Desert.

G. W. Mead, Director
C. Gehring, Assistant Director
Le G. Arnold, Assistant Director

Los Angeles County Museum of Natural History
Exposition Park • 900 Exposition Boulevard • Los Angeles, California 90007 • telephone 746 0410



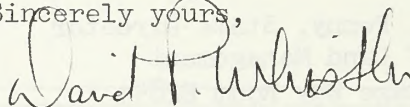
Mr. J. R. Penny

-2-

September 30, 1974

As stated previously, if I can be of further assistance, please feel free to contact me. Also, I would appreciate being kept informed of any pending changes. We have been providing a great deal of assistance and data to the BLM for over two years now, but we have never received so much as an acknowledgement in return.

Sincerely yours,

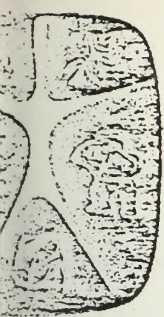


David P. Whistler
Senior Curator
Vertebrate Paleontology

DPW:mb

cc: G. Mead, Director, Natural History Museum
T. Downs, Chief, Earth Sciences, Natural History Museum

Encl: 1. October 15, 1973 letter to N. Pfulb
2. August 26, 1974 letter to L. Boll



Natural History Museum Los Angeles County

October 15, 1973

Mr. Neil Pfulb
U.S. Department of the Interior
Bureau of Land Management
California Desert Plan Program
P.O. Box 723
Riverside, California 92502

Dear Mr. Pfulb:

I would like to offer the following comments on the "Preliminary Draft, California Desert ORV Recreational Management Plan", September 8, 1973. We have already provided input to Mr. Ricardo Ramirez and Mr. Jefferson of our staff has been working closely with Mr. Hanks of your office. However, in the face of the considerable public interest and pressure produced by this plan, perhaps some specific comments are in order.

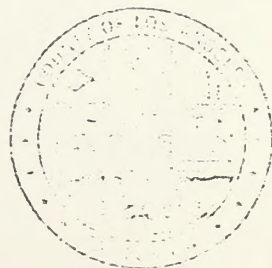
I realize that the BLM is faced with a very difficult task to provide for recreational use and at the same time attempt to preserve at least some of the desert. The obvious solution is education of the people who use the desert. In the absence of this education, a plan at least as restrictive as presently proposed is necessary if there is to be any natural desert left to educate people about.

Before going into more detail on the vertebrate paleontology of the desert, I wish to say that I fully endorse the comments and recommendations in the "Position Paper", September 25, 1973, by the staff of the Museum of Vertebrate Zoology, and the comments of Dr. Gregory, and the staff of the Museum of Paleontology, University of California, Berkeley.

Enclosed is a copy of the California Desert Plan map on which we have indicated areas which contain known vertebrate paleontological resources. Also included are our recommendations for designation of these areas based on the "importance" of their fossil content. This is basically the same list provided by Dr. Michael O. Woodburne of the University of California at Riverside. As I discussed with Mr. Ramirez, these areas should be protected, but to designate them closed based solely on their fossil content is the same as waving a red flag in front of a bull. It has long been the practice of vertebrate paleontologists to protect valuable fossil localities by attempting to preserve their anonymity.

Mead, Director
Cring, Assistant Director

Los Angeles County Museum of Natural History
600 Exposition Boulevard • Los Angeles, California 90007 • telephone 746-6410



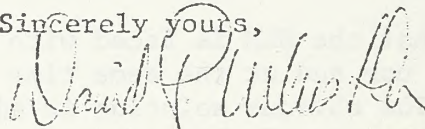
October 15, 1973

Fossils are popular with many novice rockhounds who generally indiscriminately collect any and all fossils they find by whatever means available. In my experience, this activity usually leads to the destruction of vertebrate fossils which can never be duplicated, unlike modern plants and animals which at least have some chance of regenerating. And in spite of the Federal and state antiquity acts, public education institutions such as the Natural History Museum are the only ones who obtain permits and learn and abide by the restrictions placed on fossil collecting activities.

Again, the only truly effective solution will be to develop a public appreciation and respect for vertebrate fossils (and the total desert environment, of course) and the reasons for their preservation. In the absence of this, I still feel the only remaining viable procedure is anonymity. Consequently, I request that the enclosed specific information on fossil localities not be published or otherwise indiscriminately distributed.

Thank you for the opportunity to again express a concern for the vertebrate paleontological resources of the Mojave Desert. I only hope that "would be" ORV users of the desert can be convinced of the need for greater restraint in man's activities before it is too late.

Sincerely yours,



David P. Whistler
Senior Curator
Vertebrate Paleontology

cc: Dr. Giles Mead, Director
Mr. J. R. Penny, State Director, BLM

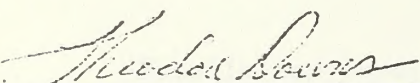
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VERTEBRATE FOSSIL PRODUCING AREAS

Numbers coded to red numbers on map.

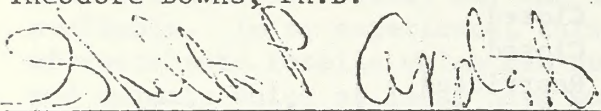
1. Alvord Mtns. locs.	Closed
2. Avawats locs.	Closed
3. Barstow locs.	Restricted
4. Black Butte (Troy)	Private/Restricted
5. Black Can. locs.	Restricted
6. Borrego Badlands	Closed
7. Cady Mtn. locs.	Closed
8. Coso locs.	Restricted
9. Cronese loc.	Restricted
0. Daggett Ridge loc.	Restricted
1. E. Hackberry Mtns.	Restricted
2. Goler	Restricted
3. Havard Hills	Restricted
4. Hector loc.	Closed
5. Indio Hills	Restricted
6. Lava Mtns. locs.	Closed
7. Little Piute Mtns. loc.	Restricted
8. Manix locs.	Restricted
9. Orocopia Mtns.	Closed
0. Piute Valley locs.	Closed
1. Ricardo locs.	Closed
2. Sacramento Mt. loc.	Restricted
3. Sands locs.	Restricted
4. Tecopa loc.	Restricted
5. Valley Wells locs.	Restricted
6. Warren locs.	Private/Restricted
7. Yermo Hills	Private claim

The foregoing statements are endorsed by the staff of the Vertebrate Paleontology Section of the Natural History Museum:



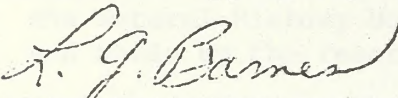
Theodore Downs, Ph.D.

Chief Curator



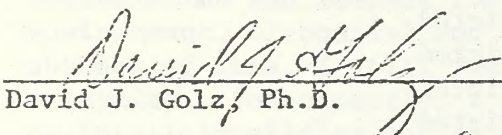
Shelton P. Applegate, Ph.D.

Associate Curator



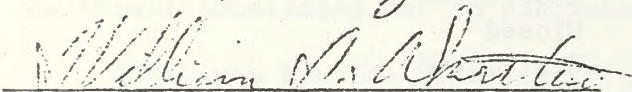
Lawrence G. Barnes, Ph.D.

Associate Curator



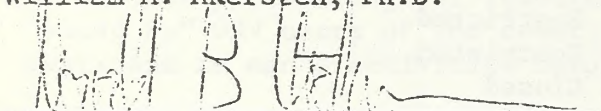
David J. Golz, Ph.D.

Associate Curator



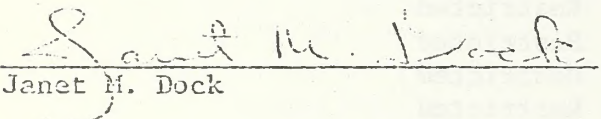
William A. Akersten, Ph.D.

Project Director, Rancho La Brea



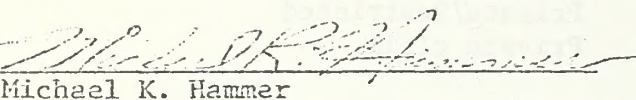
Donald B. Cocke

Senior Preparator



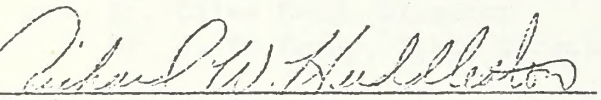
Janet M. Dock

Curatorial Assistant



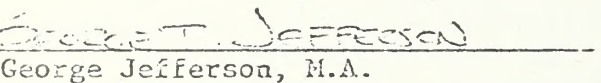
Michael K. Hammer

Senior Preparator



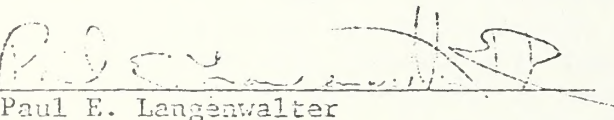
Richard M. Huddleston

Curatorial Assistant



George Jefferson, M.A.

Curatorial Assistant



Paul E. Langenwalter

Curatorial Assistant



Mary J. Odano

Senior Preparator



Natural History Museum Los Angeles County

August 26, 1974

Mr. Louis A. Boll
District Manager
United States Department of the Interior
Bureau of Land Management
800 Truxtun Avenue, Room 311
Bakersfield, California 93301

REF: 6231-0401-56

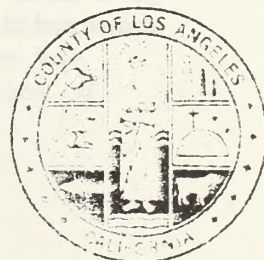
Dear Mr. Boll:

Thank you for the opportunity to examine the proposals for designation of land use in the Red Rock Canyon-El Paso Mountain and northern Cose Mountain areas. Enclosed are maps with our known fossil localities plotted on them. The University of California Museum of Paleontology, Berkeley and the Department of Earth Sciences, University of California at Riverside both have additional localities. I have already commented on both these areas with respect to the California Desert Plan Program (letter 15 October 1973 to Neil Pfulb) and more specifically, the Red Rock Canyon area (letter 9 July 1973 to William P. Mott, Jr.).

If I have transferred the Dove Springs Canyon-Area #8 and Jawbone Canyon-Areas #9 boundaries to the topographic maps properly, then it appears that Area #8 just misses having any known vertebrate fossil localities. On the contrary, the eastern margin of Area #9 is one of the most highly fossiliferous areas in California, containing 78 known vertebrate fossil localities, nearly one half the total known localities from the upper Ricardo Formation (as defined by Dibblee, 1960, pg 25). It contains the upper 1,500' of the type section of the Ricardo Formation.

Summarizing my statements in the 9 July 1973 letter to Mr. Mott, I feel that the Ricardo Formation has over 100 years of proven scientific and educational value that totally precludes

J. Mead, Director
Jehring, Assistant Director
Arnold, Assistant Director



August 26, 1974

open or even limited use by ORV's. This area is one of the finest field laboratories for geology and paleontology in California, and should not be reduced to a torn up, pulverized dust bowl simply because it is within easy commuting distance of ten million frustrated people.

Area #8, Dove Springs Canyon: Open

As already indicated, this area does not contain any known fossil localities, and based on the geology, I do not think there is a very high probability (say 2 on a scale of 1-10) of fossils being present. The three localities just down Dove Springs Wash (SE 1/4, Sec. 16) are Pleistocene (not Ricardo Formation), but they represent the only Pleistocene vertebrates in the entire Red Rock Canyon area. The fossils are in a soft gray to brown lignitic sandstone in the low bank of Dove Springs Wash. In my experience, ORV's cannot recognize a boundary, and even if they do, they will stray beyond, thus these three localities are dangerously close to an "open" area. And, of course, the wash bottom is a thoroughfare, for ORV's, no matter what designation is made. The surface of this same Pleistocene geologic unit has already been thoroughly obliterated by ORV use farther down Dove Springs Wash (SW 1/4, Sec. 22).

Area #9, Jawbone Canyon: Special Design

If I understand the meaning of this designation, then this area is still under study by BLM (in the mean time, ORV's are tearing it up every weekend as I am sure you are aware). As stated above and shown on the enclosed map, Sections 21, 22, 28, 33, T29S and the SE 1/4, Sec. 9, T30S contain numerous important fossil localities within the Ricardo Formation of late Miocene age. The localities filled in with red on the map are fossil accumulations or "quarries" which have produced a large diversity of fossil organisms. Most of the other sites have produced anywhere from one to six or seven different specimens.

This area is crossed by a powerline road, thus it becomes a natural "jumping off" place for ORV's. However, I would like to see it closed, and at least a 1-2 mile buffer zone to the west established. One solution might be to include this area within the State Recreation Area, but bureaucratic transfer problems aside, I'm not sure the State has, or is able to provide the manpower to effectively patrol this area. And they still seem to be "in limbo" as to the ORV policy in a "Recreation Area." I would not like to see such a transfer of responsibility take place only to find that the State would find it expedient to give into the ORV demands and leave this area to ORV use within a recreation area designation.

August 26, 1974

A cautionary note here, as I stated in paragraphs four and five of my letter to Neil Pfulb, vertebrate paleontologists fear the concept of publicizing the occurrence of fossils, as would be done if an area were designated closed solely for paleontologic reasons. Such a designation is only justified if the agency (the BLM in this case) has the manpower to enforce preservation of the fossils, and a mere handful of men spread over the entire Mojave Desert is obviously not adequate.

A classic example of this is Owl and Rainbow Canyons in the Barstow Formation north of Barstow, California. This area was closed to fossil collecting with signs so declaring, but no enforcement staff. The signs thus serve to pinpoint the fossil occurrence, and a sign will stop only the honest rockhounds. Based on a continued flow of fossils brought to us for identification, I would estimate that this well intended attempt at preserving a fossil occurrence has not succeeded. I would not like to see a repetition at Red Rock Canyon. The rangers at Red Rock Canyon have been able to maintain a low profile on the fossil question, still the best protection in my opinion.

Area #4, Olancho: Open

As we previously stated in our analysis of the California Desert Plan Program, we would recommend that this area be at least restricted. This area contains the type section of the Coso beds and a late Pliocene fossil fauna, including the type specimen of a genus of extinct rodent, Cosomys primus Wilson and the type specimen of two unique species, an extinct dog, Borophagus solus Stock and a mammoth Mammot cosoensis Schultz.

The specific Natural History Museum localities are plotted, but it must be noted that very little exploration for fossils has been done since the 1930's, and the entire area is underlain with the Coso beds and thus is potentially fossiliferous. The University of California Museum of Paleontology also has collections and localities from the Coso beds.

Based on the above evidence, I do not believe the BLM can justify an "open" designation for this area, and I would encourage reconsideration.

I hope the enclosed information will be useful. Please excuse my apparent impatience in the comments on the Red Rock Canyon area, but agencies have been asking me for 15 years if there is anything important out there.

If I can be of any further assistance, or if my help could be used at a public hearing, please feel free to contact me. There are too few fossil areas in the world to let one be destroyed due to lack of

Mr. Louis A. Boll

-4-

August 26, 1974

public education or appreciation of this priceless natural heritage which belongs to all the people, not just we paleontologists, or the ORV users either.

Sincerely yours,

David P. Whistler
Senior Curator
Vertebrate Paleontology

DPW:mb

P.S. I would appreciate being kept up to date on any progress in these areas.

Enclosures

cc: G. Mead, Director, Natural History Museum

W. Mott, Jr., Director, California State Park Area and Recreation System

B. Graham, Head Ranger, Red Rock Canyon State Recreation Area

F. Riddell, Supervisor Cultural Resources Section, State Park Department

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: David P. Whistler, Natural History Museum, Los Angeles, CA
letter of September 30, 1974

A paleontological section has been added to the EIS (See Sections II and III).
Mitigation measures will ensure protection of localities near the start
and Pit Stop #2. (See Section IV).



Sierra Club

Southern California Regional Conservation Committee

8 Oct 1974

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Bureau of Land Management
Federal Office Bldg, Room E-2841
2800 Cottage Way
Sacramento, Calif. 95825

Sirs:

The following comments are in response to your Draft Environmental Impact Statement for the proposed Barstow-Las Vegas motorcycle race for this year (INT DES 74-85). These comments are based on our general knowledge of both the route and past races, our reading of the EIS, and a field trip to spot check specific elements of the EIS. This field check was performed 5-6 Oct 74 by Sierra Club representatives in conjunction with individuals from the High Desert Environmental Defense Fund, the Society for California Archeology, and San Bernardino County. Time constraints limited it to three areas selected for apparent susceptibility to damage (Clark Mtn., East Cronise Lake, and the Crucifixion Thorn area). Detailed comments on the findings of this trip will be found throughout the statements of all the participants, but not necessarily in entirety in any given one.

Our comments are organized into two general categories: some specific evaluation on the accuracy and adequacy of the information contained in the EIS, and additional remarks using the EIS and supplemental observations as a starting point.

First we would like to say that we fully appreciate the extensive effort that has gone into the preparation of this EIS. It is generally quite good, and its approach is a significant step toward a comprehensive evaluation of the resources of the California Desert. Our comments should be taken more as a recognition of the overall scale and complexity of the problem and our current lack of knowledge than as a criticism of those who prepared it. There are, however, some conceptual deficiencies that keep the information it contains from being utilized effectively.

Specific Comments from Field Check:

These comments are directed both at our findings and at the mitigation measures proposed in the EIS.

1. Clark Mountain. Our observations confirm the evaluation that even with mitigation "...the potential for significant habitat damage and disturbance to wildlife is high." This problem is most

striking at Pechalka Springs, where a dependable water supply for wildlife coincides with high cultural and recreational values. The area is used regularly by wildlife (we found scat from bighorn sheep on our visit and the site is a regular stop for many migratory birds). It is located in an extensive midden area and is a short distance from a significant petroglyph site that has recently experienced a major theft. We found a previously unrecorded petroglyph less than 10 feet from the road in a very cursory look down the wash from Pechalka. To suggest changing the route to visit this site seems totally inappropriate.

If the initial route requested north of the mountain is deemed unacceptable because of its use of Colosseum Gorge, it could either be routed further north up Kingston Wash to the DWP right of way and along that across Keany Pass, or perhaps even up the original route using the existing jeep road) to the road leading north in Section 7 and up it to the DWP right of way and east. Our initial evaluation is that this latter course would provide adequate challenge to the participants with substantially less impact than the currently proposed route. Permission for such use of the right of way should be available from DWP, as we understand it is frequently used by SWORE for competitive events.

2. East Cronise Lake. Two primary problems were found in this area. There is no clearly defined route through the mesquite clumps south of the lake and through the desert willow wash leading on down to the mouth of Afton Canyon. This is not a problem unique to this one area, but it illustrates the obvious difficulty in restricting participants to a given route in such areas in any but the most general sense. After the first few riders, dust obscures the route markings and subsequent riders merely follow the cloud and engage in a great deal of new route finding. This general problem is discussed below.

The site SBr-129 appears subject to significant spectator impact as a result of the levee and the Basin Road exit from the freeway producing an excellent vantage point directly adjacent to the site. No mitigation measure is proposed in the EIS to reduce this impact.

3. Crucifixion Thorn. We do not understand the 0-5% habitat destruction estimated by the EIS. In view of the number of vehicles that will be running at this early point in the race and the nature of the terrain around the playa, we seriously question the capability of any route markings or even the presence of course marshals to keep bikes out of the playa area. The remark that riders would avoid these thorny plants is, of course, true -- but that would not prevent extensive damage to the vegetation surrounding them. There are only a couple of dozen specimens scattered across the south end of the playa, and riders could cause significant damage to the ecosystem in the playa without having to touch the Crucifixion Thorn themselves. The valley is quite small and such passage seems inevitable despite on-site mitigation. This problem is intensified by our finding a date and other evidence of human usage scattered throughout the lake

edge sand. The only reasonable mitigation would seem to be relocation of the route, perhaps to the north into the wash the route eventually joins or south around the mountain to the east of the playa.

Spectator Impact.

Although it is referred to frequently, little measure is made of spectator impacts anywhere other than the start, finish, and pit areas. We feel that such impact is normally a significant portion of the total caused by such a competitive event, especially one as publicized as this is. On a linear race such as this there will be two types of spectators, those following it (usually partisans of a particular person or group) and those watching its passage from a favored vantage point. Both have their problems.

The follower moves from point to point along the course as the element being followed passes. Thus the impact is focused at those points where easy access to the course exists. In this case, such concentration will occur where the race crosses either the Interstate or one of its improved intersecting routes. There are several such points other than the pit areas where some controls over spectator access and behavior would be needed to mitigate impact. The archeological site at Basin Road is an example. The possibility of such impact also exists at the Crucifixion Thorn area (branches make nice souvenirs).

Stationary spectators will gather at those areas that make good camping and picnicking sites. This may result in use far beyond the capacity of such areas and seriously damage their resource value for those who use them during the rest of the year. There are a large number of such sites that should be evaluated and have spectator use restricted to some reasonable limit. Pachalka Springs is an outstanding example in that it is a valuable resource to wildlife as well as an attractive camping site.

User Familiarization.

The eastern Mojave Desert is an extremely scenic area that is currently receiving only light recreational use. Large events such as this will familiarize the vehicle-oriented recreationist with its attractions and lead to increasing use of the area as an alternative to existing use areas. The potential for such "follow-on" impact is mentioned but not analyzed in the EIS. We have generally supported the establishment of vehicular use areas as a method of relieving such use in other areas, and feel that this event presents a possible step in the wrong direction. One of the principle factors protecting the natural resources of the eastern Mojave Desert at present is its isolation and low level of visitation. To the extent that the protection is removed by such large groups of visitors, it will be necessary to seek more formal regulatory protection.

Race Format.

The nature of the format used for a motorcycle race has a real bearing on the type of impact it causes. The "hare and hounds" style used for this race has far greater impact than an enduro style, for example. The mass release of riders causes large concentrations traveling together. Where the terrain permits, these groups will fan out across a considerable area attempting to avoid both other riders and their dust. This phenomenon is alluded to in the EIS by observations about the width of the course being hundreds of feet in places, and by suggesting occasional mitigation through "restricting" the course to 20 or 100 feet. No mention is made that such swath-cutting (even under mitigation) is characteristic only of this style of race.

This is important in that most of the direct impact resulting from the race itself (excluding spectator, follow-on, and other types of impact) is a consequence of this characteristic. As is pointed out in the EIS, this race is intended to be run over existing trails. Under the proposed definition of an existing trail used in the revised ICMP (which will be effective at the time proposed for this race) such a trail must be at least two feet wide. The passage of even a large number of motorcycles, if it occurs sequentially, will have little additional physical impact on such a route. The result of the proposed race will be to spread that impact over a much broader but still limited band, resulting in the predictable damage optimistically detailed in the EIS.

We suggest that adoption of an enduro style race format would substantially mitigate this impact. For example, releasing groups of five riders of decreasing competence at one minute intervals would (assuming a 30 mph average) result in an average of ten riders per mile at the start, a figure which would diminish as the better riders pulled away and attrition occurred. In addition to decreasing direct physical impact, such passage would significantly attenuate noise and dust pollution and reduce the probability of accidents. Although this would probably result in some reduction in the total number of possible participants through both daylight and bookkeeping limitations, we have additional observations to make on this factor in our next comment.

Carrying Capacity.

The 3,000 participant limit discussed in the EIS is an admittedly arbitrary one. The BLM has developed a degree of sophistication in estimating the "carrying capacity" of land as part of its grazing management. We feel some similar concept must be applied to the management of vehicular recreation on national resource lands. This proposed race has obviously been planned without reference to such considerations.

While we recognize that current knowledge on the impact of vehicle use is more limited than on animal grazing, it is clear to us in reading the EIS that there is some rough perception on the part of BLM staff that such a capacity exists and can be estimated. Some of the

factors involved would be type of vehicle (motorcycle, jeep, etc.); nature of use (racing, touring, prospecting, etc); style of use (race format); type of soil, vegetation, wildlife, and similar habitat parameters; time of year; and weather. Under different conditions, different numbers of vehicles could be permitted.

It is obvious that sustained use of the land will require such management consideration. We feel this EIS is deficient in its failure to do so, for it is clear from the discussion of additional resulting impact that this race far exceeds the carrying capacity of the proposed course.

Repeated Events.

Another serious deficiency in this EIS is its failure to confront adequately the problem of future occurrences of this event. We fully agree with the comments made in the section on "Adverse Precedents" under unavoidable adverse impacts, except that we feel that it has been clearly demonstrated that this event is "environmentally impacting."

As is mentioned several times in the EIS, the immediate impact is of two sorts: additional destruction of habitat and renewed use preventing recovery of previously impacted areas. This repeated impact in some cases will actually cause such complete destruction as to preclude recovery. While such permanent effects may be acceptable on existing trails where no recovery is anticipated, they are not acceptable in the broad swath cut by the proposed race and in its accompanying peripheral use areas.

An additional hazard is the statistical probability of adverse weather seriously increasing the impact. Certain of the soil types discussed in the EIS are especially susceptible to severe damage if wet, and while the probability that such conditions would exist in any given year are not high, it does become so if the continuation of the race over a series of years is considered. The EIS states that one year out of seven sees precipitation of 1.3 inches or more during November. The odds are thus quite high that this event will encounter such conditions in the near future. Some provision for cancellation in case of poor surface conditions should be included in the permit as a minimal mitigating measure.

In short, the total impact over time should have been given its full weight in the conclusions of the EIS. It is impossible to treat this race as an isolated event.

Concluding Recommendations.

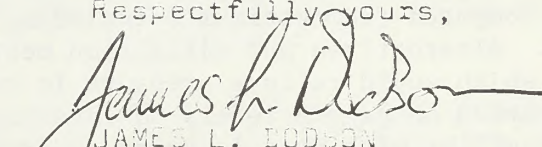
We want to make it quite clear that we are not necessarily opposed to the occurrence of a Barstow-Las Vegas motorcycle race. We recognize that vehicle use is one of a number of valid recreational uses of national resource lands. We do maintain that to fulfill its management responsibilities the BLM must regulate all such use in a manner to minimize and where possible eliminate adverse impacts on such lands.

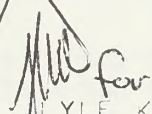
To issue a permit for this race as proposed would clearly not be exercising such management. We will oppose the approval of any such race that will result in additional impact or prevent unnecessarily the recovery of previously impacted areas.

There are a number of techniques mentioned above that if properly used might well make it possible to hold this race. Using an enduro format, placing adequate controls over the race size and spectator access in view of the carrying capacity of the areas involved, a thorough survey of existing non-replaceable cultural values, more careful selection of routes to avoid areas of high impact potential, some allowance for adverse weather conditions all have strong mitigating potential.

The BLM is faced with a crucial decision at this time. If this race as proposed is approved and run, the expectation will be quite clear that so will future events of the same nature. While the EIS seems to dismiss the choice of not approving this permit with hints of a potential violent confrontation and the event being held anyway without supervision, this seems rather unrealistic in view of the assurances of the sponsoring group to abide by the BLM's decision and the good reputation held by the AMA for cooperating with regulatory agencies. We urge the Bureau to take a firm stand at this time in the interests of responsible management of the resources in its trust and seek to work both with user and conservationist groups to design management plans to encourage non-destructive use of the land.

Respectfully yours,


JAMES L. DODSON
Chairman, URV Subcommittee


LYLE K. GASTON
Chairman, Desert Subcommittee

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Sierra Club, So. California Regional Conservation
Committee, letter of October 8, 1974

Paragraph 1 refers to routing the racecourse by Pachalka Springs. Two alternative routes bypassing that area have been included in the alternatives section.

Paragraph 2 refers to the problem of restricting racers to a definite route. In Section IV, Mitigation Measures, this is one of several areas that is identified as requiring special marking or course marshals to reduce the course width and restrict the racers to a given course.

Paragraph 3 refers to the crucifixion thorn community. A proposal to route the course clear of the site will be included as a mitigating measure in the final impact statement.

Archaeology - Refer to response to letter from Ike Eastvold of 10/7/74.

Spectator Impact on page 3 refers to spectator impacts at points other than the start, finish and pit areas. The acreage included in the draft text were computed from estimates including all incidental impacts along the trail. Alternatives and mitigation measures are included in the final statement which would relieve pressure in certain fragile areas. User Familiarization on page 3 refers to later impacts growing from more people becoming familiar with certain areas. Certain alternatives which appear in the final statement are designed to steer competitors away from certain critical resource areas, such as Clark Mountain.

Race Format on page 4 refers to changing the event from a hare and hound race to an enduro. The sponsor has applied for a hare and hound event for a large number of participants. The enduro race format is awkward for handling large numbers of contestants. Therefore, the impacts are assessed for a hare and hound event only.

Carrying Capacity on page 4 refers to reducing the number of contestants to an established number which would have the least possible effect upon the land. Since a land oriented carrying capacity has not been determined and a limitation on numbers has been established in relation to the sponsor's capability to manage the people, the impacts are assessed based upon 3,000 contestants.

SOUTHERN CALIFORNIA ACADEMY OF SCIENCE
CONSERVATION COMMITTEE
1000 N. DURFEE
SOUTH EL MONTE, CALIFORNIA

To	Initial	Date
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Action By

Return to

October 7, 1974

Mr. J. R. Penny
Director
California State Office, Sacramento, California
Bureau of Land Management
Department of the Interior

Dear Mr. Penny,

Thank you for forwarding a copy of the Draft EIS on the proposed Barstow-Las Vegas motorcycle race.

We have been in contact with members of the Natural History Museum of Los Angeles County, Pasadena and El Dorado Audubon Conservation Committees, and have on various occasions individually inspected portions of the proposed course between 1969 and 1974.

Based on site investigations, discussions with members of the forementioned agencies and a review of the EIS, we are greatly concerned about the loss of desert habitats and the biota which depend on these habitats for their survival. Because of the diversity of plant and animal life along the proposed race course and extreme fragility of desert habitats the area should be considered of high quality.

We have reviewed the Draft EIS and with notable exceptions find it well done and basically correct. Those major exceptions are listed below:

a. Quantative data in which to predict confidence limits for population estimates are generally lacking. Rare, locally rare, expected rare, and similar such terms do not give an accurate picture of the wildlife populations present.

We agree that aerial and ground photographs (Section IV-A-3, Mitigation Measures) may allow quantative evaluations of the impact on vegetation, but the changes in animal density can only be supposed. Loss of vegetation will undoubtedly occur bringing about reduction in animal species density and diversity (previous studies mentioned in report).

The reduction in animal species density for each kind of plant community can be better ascertained if quantitative data are available before further adverse impact occurs.

b. One vertebrate species which is found close to the race course, Citellus mohavensis, although not included in the report, should be considered as possibly occurring there.

c. The biological assessment should have included a statement on Paleontology. Several areas that will probably incur significant impactment from ORV's have been reported to you (Riverside office) by David P. Wistler (Natural History Museum Los Angeles County) in a letter dated October 15, 1973.

We fully endorse the comments and recommendations on Vertebrate Paleontology from the aforementioned agency.

d. The archeological survey was not adequate. In order to insure this resource is protected, a walk-over archeological survey of the entire proposed course should be required.

e. It is a mystery to us how Section IV-A-3 can be considered with mitigating measures. Certainly, monitoring the devastation of desert habitats is highly desirable, but we doubt these measures will soften the impact on the area.

From our point of view the proposed race has one major shortcoming; that is, the destruction of valuable desert habitats and loss of wildlife.

We suggest that in order to minimize environmental damage the following precautions be considered:

a. Only existing roads be used; not trails.

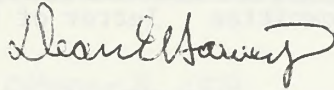
b. The Clark Mountains and vicinity (a biologically very significant area) be by-passed by using a single lane of Interstate 15.

c. Allow only experts and a limited number of outstanding amateur riders to participate in the race. The probability of a good experienced rider staying on the course should be better than a novice.

Finally, we feel that unless the Bureau of Land Management and similar such agencies takes some steps to instill environmental awareness through education to desert users, their cumulative actions can only result in the gradual permanent degradation of the desert environment.

Again, thank you for the opportunity to provide our views
on the Barstow-Las Vegas motorcycle race.

Sincerely yours,



Dean E. Harvey
Chairman, Conservation Committee

cc: Los Angeles County Museum of Natural History
Attn: Lani Lester
Attn: David P. Wistler

Pasadena Audubon
Attn: Michael Long

El Dorado Audubon
Attn: Vernon C. Bleich

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Southern California Academy of Science, Conservation
Committee letter of October 7, 1974

The terms rare, locally rare and expected rare are used to refer to plants and not to wildlife. See Appendix II-B-3, Section XI.

There is little, if any, quantitative data available on population densities for the various animal species listed in the 14 wildlife habitats that occur along the racecourse. Densities of the species and estimated losses per acre would be a valuable addition to the statement. Unfortunately, such data would require many years to acquire. However, with the exception of a few sensitive species, losses to animal populations in numbers are not considered as important as losses to the habitat. Without the habitat, there is no animal community. Habitat losses are estimated in Table II-B-1.

The presence of the Mojave ground squirrel (Citellus mojavenis) within the confines of the racecourse is hypothetical. The known geographic range of the Mojave ground squirrel lies to the west of Barstow and west of the start of the racecourse by 35 miles. The known trapping sites on the eastern edge of the geographic range are: 15 miles west of Barstow (Museum of Vertebrate Zoology 81813); Oro Grande (Museum of Vertebrate Zoology 31515); Rabbit Spring (U.S. Natl. Museum 192754, 192755, 192756, 186469).

Paleontology has been added to the Geology portion in Sections II and III.

The trails which are proposed for use in this event have all been used for competitive events previously. As a result, they are defined. Since the route is entirely on existing roads and trails which will be well marked and monitored, there is little problem with impacts from riders getting lost. Furthermore, the amateur riders, being slower or starting in the second wave, follow the leaders on the route.

The use of a single lane of Interstate 15 as a part of the route is not a viable alternative. The California Department of Transportation will not allow this type of use of its right-of-way because of the obvious safety hazard it would present to both competitors and the freeway traffic.

Monitoring programs are most useful in determining baseline information from an action. Also, such information is necessary to develop more precise analyses on impacts; particularly for soil, vegetation and the associated wildlife habitats..

Item a, page 3, refers to alignment along all roads rather than trails. Since such alignment would be difficult to locate over the long distance involved and the race would lose its definition and challenge to the participant, this was not considered an alternative.



DEPARTMENT OF BOTANY

BERKELEY, CALIFORNIA 94720

October 8, 1974

Mr. J. R. Penny
U.S. Department of the Interior
Bureau of Land Management
300 Cottage Way, Room E-2841
Sacramento, California 95825

Dear Mr. Penny:

To	Initial	Date
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Return to _____		

I have had the opportunity to read through a copy of the "Draft Environmental Impact Statement" for the Barstow to Las Vegas motorcycle race. Although there has been little time for checking the details of the references to the flora and vegetation, I can say that I saw very few spelling errors and found no errors of fact.

It is apparent that much hard work has been put into the preparation of the statement although one must regret that so much of it seems to have been done so recently. Because of this the flora and vegetation were only examined in the field at the height of the summer rather than in the early spring, the only time when full appreciation of the quality of the floristic display can be obtained. It is in the spring that the dreadful scarring of the desert by bikes is most obvious. It is also clear at that time that opinions such as those expressed in the statement about the speed of recovery of the vegetation from the impact of the vehicles are more optimistic than realistic. And these opinions deal only with a non-repetitive situation. If this race takes place annually there must be destruction without recovery not only on the race track itself but in many of the surrounding areas that will be trespassed upon by the campfollowers of the racers as well as the spectators. The garbage that will surely be left by thousands of spectators and participants will add to the factors promoting change to an unnatural vegetation.

As I cannot agree that, however slowly, natural vegetation will always return, for the following reasons:

1. It appears that the disturbance will be repeated.
2. There are plenty of exotic, weedy species already in California awaiting introduction into disturbed habitats to take up a dominant position. There is no reason to be surprised that the Russian Thistle (Salsola kali) was one of the first species to invade the Nevada Atomic Test sites. It, along with other herbaceous and woody weeds, is particularly likely to enter the better-watered communities that are disrupted by the race and attendant activities.
3. Even the annual spring flora, which one would expect to be the quickest to return after disturbance, is unable to make a show where the soil has been either scraped away or unnaturally compacted. Such a failure stands

Mr. J. R. Penny

-2-

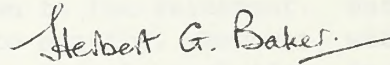
October 8, 1974

out most obviously on hill sites but is probably no less severe on the plains and is extremely serious in the sinks and playas.

There is particular reason to be cautious about further activity in the vicinity of Clark Mountain, not only because of the Gila monster and puma habitats that are threatened, but also because this is an unusually rich area for rare plants, whose loss cannot in any way be replaced.

Needless to say, I hope very much that if the race cannot be put off altogether, at least it will not be repeated.

Sincerely,



Herbert G. Baker
Professor of Botany

HGB:pn

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Dr. Herbert G. Baker, Professor of Botany, Department
of Botany, University of California, Berkeley

Your comment about examining desert vegetation in the spring is well taken. One of the mitigating measures (IV-A.3) includes establishing 25 environmental sampling plots. The plots will be photographed before and after the race and will be examined monthly from February through June in plots at lower elevations and April through September at higher elevations to determine changes in soils and vegetation. Study of the plots may help to determine time for recovery of vegetation.

The long-term effects of the proposed action on vegetation are discussed in Sections III.2 Impacts on Vegetation, V.1 Impacts on Vegetation, VI, and VII. Estimates for recovery of vegetation have been modified to emphasize the problems of invasion of exotics, repetitive use of the course, and possible failure of the natural vegetation to ever return.

Two additional alternative routes that bypass the southern Clark Mountains have been added to Section VIII and will be considered in the final draft of the impact statement.

DENNIS G. CASEBIER
P.O. Box 307
Norco, California 91760

SEP 20 9 23 AM '74

September 24, 1974

J. R. Penny, State Director
California State Office
Bureau of Land Management
Federal Office Building
2800 Cottage Way, Room E-2841
Sacramento, California 95825

To	Initial	Date
1	SD	9-24-74
2	ASD	9-24-74
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Dear Mr. Penny:

I have looked through your Draft Environmental Impact Statement for the proposed Barstow-Las Vegas Motorcycle Race. I am very impressed with how thoroughly and professionally this important subject has been studied by the BLM.

The main reason for writing is to bring up one point that is not specifically addressed in the impact statement and that you might want to consider.

As you know, the old Mojave Road (which evolved from the prehistoric Mohave Indian Trail) runs through the Soda Lake country. There is an effort afoot (which I believe will be successful) on the part of the BLM and the San Bernardino County Museum and others to have this trail entered on the National Register of Historic Places and established as a National Hiking Trail. The section of the trail being considered for this distinction is the 130 miles from the site of old Camp Cady eastward to the west bank of the Colorado River opposite the site of Fort Mojave.

I think this proposed new hiking trail has the potential to develop into an important national resource. It traverses the full spectrum of Mojave Desert flora and fauna and passes through many areas that are archeologically important. Also, it runs through dramatic and spectacular geological formations and is a treasure-house of history.

It will add considerably to the historic feeling of this contemplated trail if it can be marked out precisely along the trace of the old wagon road. This poses a problem only through the Soda Lake country--from the mouth of Afton Canyon to Soda Springs and on to Old Dad Mountain. The problem here is that blowing sand has all but obliterated the old trace.

I and a few others have done informal surface surveys in the Soda Lake country in an attempt to locate the old trace. Evidence is found in the following forms: rock alignments, faint linear depressions, broken horseshoes, square nails, and at one place a fragile wooden packsaddle was found. Hopefully, evidence like this will permit historical archeologists to determine exactly where the old road went. In this way the integrity of the road will be reestablished, marked out, and guaranteed forever as a hiking trail for all to enjoy.

The possibility of there being new evidence of the route of the old road through this country has just recently emerged. Within the last few weeks I saw an 1875 account that had been previously unknown to me and that indicates that at that time the government had planted poles along the road through the Soda Lake country to keep the teamsters from getting lost in the blow sand. This kindles the hope that stumps of these poles (probably worn away at the surface of the ground by the action of drifting sand) can be found and that these could provide certain evidence that we have the correct trace of the old road.

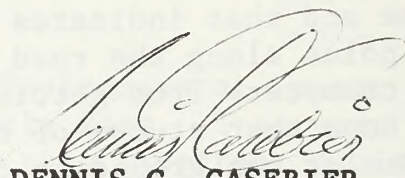
It would seem to me that, if 3000 motorcycles are permitted to race through the Soda Lake country, the problem of locating the Mojave Road will be greatly complicated--and perhaps precluded altogether. It may be that the definitive evidence we are looking for (perhaps the only remaining stump or another fragile packsaddle) is right in the path of the race--we don't know because we don't know the precise route the road took.

On the attached segment from an Auto Club map I am showing, outlined in red, the area in which it might be logical to search for the old road. Even though it was an east/west road, the area is quite wide in the north/south direction because it is not yet known how far the teamsters were willing to go out of their way to avoid the worst of the blow sand. The area east of Soda Lake is even larger than that to the west because there are two different traces in that stretch that were used at different times.

Because of the potential importance of the Mojave Road to the future development of the eastern Mojave Desert--and because I think this motorcycle race will complicate a determination of the exact route of the old trail--I strongly recommend that the race track not be permitted in the area indicated on the attached map.

I know the BLM has a responsibility to provide a place for motorcycle and other ORV competition on the public lands. It is proper that this be done to some extent. It seems to me, however, that such events constitute a destructive use of the land. The immense potential of the eastern Mojave Desert for more lasting nondestructive uses should--I think--prohibit any motorcycle or other ORV competition events in that area in the future.

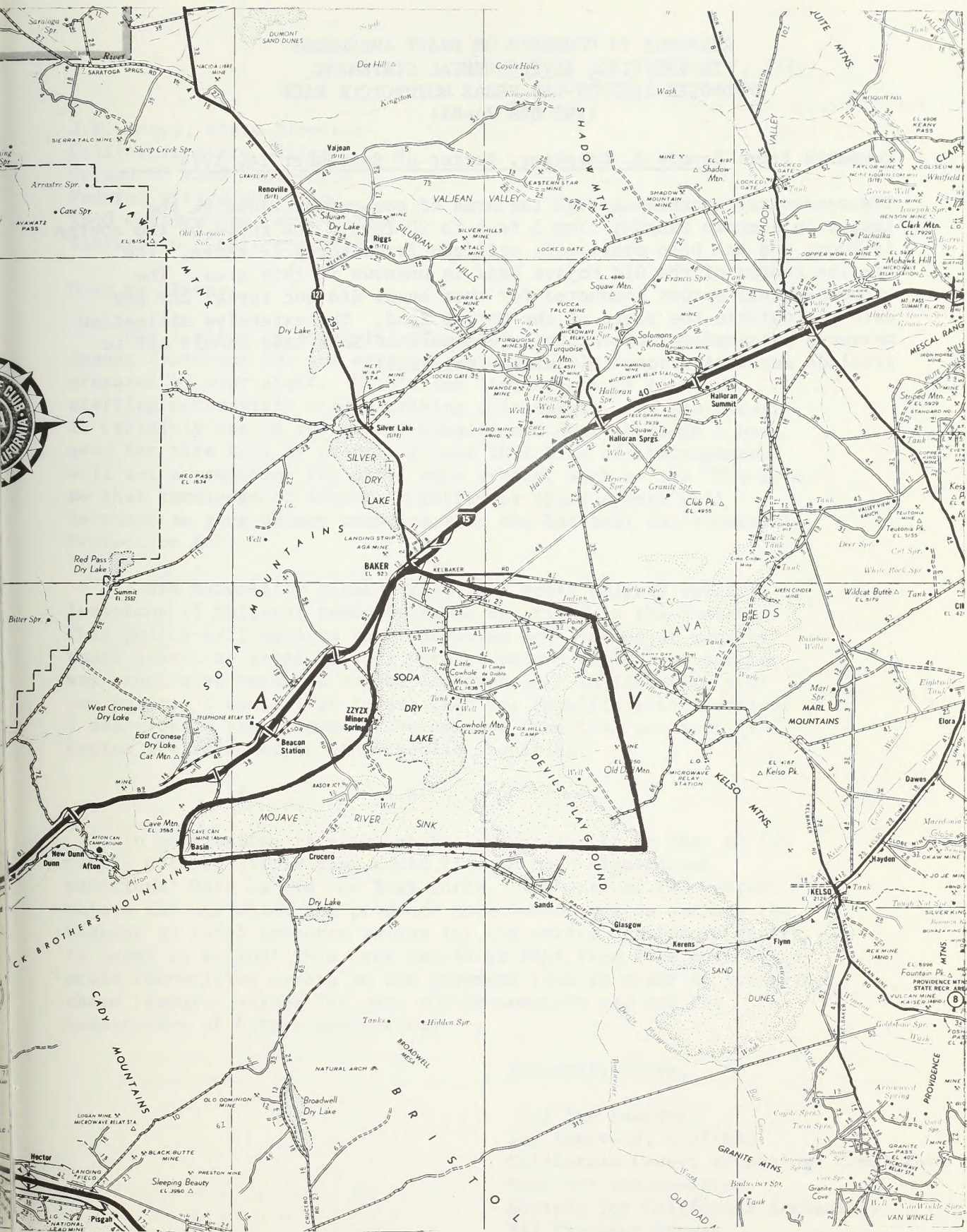
With best regards,



DENNIS G. CASEBIER

Copy to:

E. I. Edwards
Arda M. Haenszel
James L. Mayfield
Donald R. Murchie
Neil Pfulb
Dr. Gerald A. Smith
Delmar D. Vail



RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Dennis G. Casebier, letter of September 24, 1974

The racecourse crosses through the area of concern outlined in the letter in a swath ranging from 5 feet to 20 feet. The route of the course is known and has been previously utilized for motorcycle races. The precise routes of the Old Mojave Road is unknown in this area. The archaeological survey conducted for this event did not reveal any new data to indicate the route of the Mojave Road. The extensive mitigation measures proposed for the southwestern part of Soda Lake should act to preclude any impact upon this historical trail.

October 7, 1974

J.R. Penny, State Director
California State Office
Bureau of Land Management
Federal Office Building
2800 Cottage Way, Room E-2841
Sacramento, California 95825

Dear Mr. Penny:

May I offer my congratulations for the fine Environmental Impact Statement for the proposed Barstow-Vegas Motorcycle Race prepared by your staff. Within the limitations of time and staffing necessarily circumscribing this effort, the statement is certainly one of the widest-ranging and most thorough I have seen for this type of event. I hope this kind of thoroughness will set a precedent for other race events, such as the "Checkers," so that knowledge of impacts entailed by these events will increase as your agency complies with the National Environmental Protection Act.

I was especially pleased that your staff omitted specific locations of cultural resource sites described in the Statement. This policy will help to curb vandalism and looting at many of these sensitive areas if they were to become well known before any protective measures can be implemented. In line with your own policy, I would like to ask that any specific site locations I describe in these comments be omitted from this document if copies are released to other public inquiries.

*

*

*

In conclusion, it seems rather surprising to me that so few people with so little time could find so much significant additional data as did our Task Force. The area of the eastern Mojave through which the proposed racecourse runs is perhaps the highest in total resource values for the entire California desert. It seems to me that this area should be kept free from such large-scale competitive events as the proposed race in order to preserve these resource values for more non-consumptive use and the inspiration of future generations.

Sincerely yours,

/s/ Ike Eastvold
Ike Eastvold, Chairman
California Desert Archeology Committee
Rock Art Subcommittee
Society for California Archeology
541 Prospect Street
Highgrove, California 92507

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Ike Eastvold, Society for California Archeology

Pursuant to the author's request and BLM policy, specific site information has been deleted from the original letter.

I. The EIS intentionally omitted mention of certain specific archaeological sites to avoid drawing further attention to an area which is presently receiving heavy impact. The race course passes through this area on a well defined existing road. The terrain and vegetation are such that off the road riding is all but impossible.

II. Pachalka Spring. On pages II-64 and II-65 of the draft Environmental Statement, the cultural resources of Pachalka Spring are discussed. The race course follows a graded existing road that passes to the south of the spring. The Barstow to Vegas race is a high speed competitive event not allowing participants time to "sightsee" along the way. The course follows the only access to Pachalks Spring, thus effectively keeping out all other vehicles during the event.

The midden referred to surrounding the spring may well be a natural spring deposit. No cultural remains were observed on the surface. Test excavations would be required to determine the derivation of this darkened soil. The race will not impact the spring area as it passes 200 yards along the ridge to the south.

As pointed out on page II-65, the course does pass a possible roasting pit midden.

III. Based on past experience, spectators are not anticipated near SBr-129. The area may be patrolled by BLM personnel to insure protection of the site.

IV. The Crucifixion Thorn area has been eliminated from the race course. Vehicles will be routed around on an existing, graded road. This area is popular for camping and indiscriminate motorcycle riding.



Reply to:

MUSEUM OF VERTEBRATE ZOOLOGY
2593 LIFE SCIENCES BUILDING
BERKELEY, CALIFORNIA 94720

October 11, 1974

No	Initial	Date
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Return to _____		

Mr. J. R. Penny
State Director
Bureau of Land Management
2800 Cottage Way, Room E-2841
Sacramento, California 95825

Dear Mr. Penny:

I have recently studied the Draft Environmental Impact Statement for the proposed Barstow-Las Vegas motorcycle race, to be held 30 November, 1974. I thought it might be helpful to pass on to you my general reactions, as a biological scientist and educator, to this Statement.

The Draft Statement seems to have been carefully prepared and accurately reflects the probable impact on living organisms and aesthetic values, at least as far as can be judged by available information. Unfortunately, it concerns an area that is not well known biologically so that the real impact is almost certain to be greater than that outlined. I am not competent professionally to judge the parts of the report on non-living resources or recreation uses. What about a statement concerning fuel consumption by both the racers and the spectators?

The core of the problem, of course, is to weigh the value of the long and short-term destruction of the environment against the recreational benefits to thousands of people on a single weekend. Being especially sensitive to the intensity of the destruction, both biologically and aesthetically, it seems to me to be an extremely high price to pay for a brief orgy of recreation. Especially is this true if one considers that approval of this kind of a race will only encourage increased interest in this type of destructive past-time and ever increasing numbers of such proposals in the future.

Unfortunately the argument that complete cancellation of this proposed race will likely lead to even greater destruction of the desert, through unofficial races and negative feelings among ORV

Page 2.

Mr. J. R. Penny

October 11, 1974

club members, is a compelling one. Cancellation should be about six months before the race is proposed. Thus future requests for permits, it seems to me, should be made about one year ahead of every proposed race. In the present case, re-routing may be the best tactic. The vicinity of Clarke Mountain and Palchaka Spring should definitely be avoided. No virgin territory should be included in the route if at all possible.

I hope these comments will be useful to you in dealing with this most difficult problem.

Sincerely yours,



William Z. Lidicker, Jr.
Professor of Zoology and
Curator of Mammals

WZL, Jr.:o'c

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Wm. Lidicker, Jr., Prof. of Zoology, U.C. Berkeley
letter of October 11, 1974

Estimates of gasoline consumption have been made and are included in Sections VII and XI of this report.

The losses to wildlife habitats outlined in Table III-B-1 and to wildlife species discussed in Section III are probably conservative estimates. Data on population densities during all four seasons in the 14 habitats covered by the racecourse are lacking. In the absence of extensive field data, estimates were based on short-term studies conducted on a few species in other parts of the Mojave Desert.

Two additional alternate routes that bypass the Clark Mountain and Pachalka Springs resource areas have been added to the final draft of the impact statement. Alternatives have been developed and placed in Section VIII of this environmental impact statement which would route the race north of Clark Mountain through Keany Pass.

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OCT 11 9 54 AM '74

CALIF. STATE OFFICE
SACRAMENTO, CALIF.

8 October 1974

Action By _____

Return to _____

J. R. Penny
State Director
California State Office
Bureau of Land Management
Sacramento, California

Dear Mr. Penny:

As Conservation Chairman of the Pasadena Audubon Society, I have just finished reviewing a copy of the Draft Environmental Impact Statement for the proposed Barstow - Las Vegas Motorcycle Race. In general the report appears to be very thorough and the sections on the Living Components and the impact of the race on the plants and animals are well-stated and I am in strong agreement.

As the report cites a lack of desert-user statistics, BLM should initiate field surveys to determine quantitative data on recreational use of the deserts. (i.e. how many wilderness experience people vs. how many off-road vehicle people).

The lengthy, well documented and carefully stated effects of motorcycles on the desert habitat, the flora and fauna, especially data on the damage already done and that anticipated with one more race, seems to preclude the possibility of allowing the race.

There appeared to be listed too few "Alternatives to the Proposed Action". What about shortening the race distance from Barstow to just west of the Clark Mountains? This would avoid the severe impact motorcycles might have on this highly significant area. This would make the race shorter in length but no less "exciting" or challenging. One animal not cited in the report but potentially to be found in the Clark Mtn. area is the rare Panamint Alligator Lizard (Gerrhonotus panamintinus). Relictual populations may occur in fragile desert springs.

Again, I am in basic agreement with the facts presented in the statement and appreciate the opportunity to review the E.I.S.

Sincerely,

Michael C. Long

Michael C. Long
Conservation Chairman, Pasadena Audubon Society
206-G So. Electric Ave.,
Alhambra, California 91801

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Michael C. Long, Pasadena Audubon Society,
letter of October 8, 1974

The Bureau of Land Management has initiated field surveys to determine quantitative recreation use in various parts of the California Desert. Acquisition of desert wide trend data was begun in 1974 with the implementation of a program of periodic aerial survey flights. The BLM also plans to undertake qualitative surveys of desert recreational use in 1975 which, among other things, will compare numbers of off-road vehicle users and wilderness experience seekers.

The alternative section has been expanded to include other routes.

It is certainly possible that the rare Panamint alligator lizard, Gerrhonotus panamintinus, may be found in the Clark Mountains. However, known sites lie to the northwest in the Panamint, Grapevine and Inyo Mountains of Inyo County. The closest recorded site is over 80 to 90 miles away. This species was not included in the statement because its presence is only hypothetical.

To	Initial	Date
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October 9, 1974

Bureau of Land Management
State Office
Federal Office Building, Room E-2841
2800 Cottage Way
Sacramento, CA 95825

Action By _____
Return to _____

Dear Sir;

I have a number of comments that I would like to make in regards to the proposed Barstow-Las Vegas motorcycle race. These comments have been derived from a perusal of your recent report (Environmental Draft Statement, Barstow-Las Vegas Motorcycle Race), and from a number of thorough, localized spot checks of various sectors of the existant and proposed race course.

The primary purpose of this field reconnaissance was to personally verify if, indeed, various of the suggestions and recommendations were true regarding changes in the location of the race course for this year's race, and to examine whether, under these or other conditions, it were possible to run such a race without risking undue environmental damage.

With this primary philosophy in mind, investigations were performed in the following areas: 1) the vicinity of Pachalka Springs, on the south side of Clark Mountain, 2) the area immediately west and north of Coliseum Gorge, 3) that area immediately west of the Basin Road interchange with Interstate 15, and 4) that part of the Cady Mountains, north of the Interstate, in which the race course passes through a Crucifixion Thorn plant community.

In the Pachalka Springs area, it was found that, while the road is perhaps well-suited for motorcycle use, that a number of accessory problems make this alternative unfeasible. First, the springs area itself is an historically valuable area which is in a fragile state of decay, a type of decay which, if exposed to large-scale public usage, would most assuredly suffer detrimental effects. This damage, brought on by spectator attraction and by probable participant return, would occur to both tree life and historic structures.

As well, there exists in the vicinity of the springs a well-defined, easily-located petroglyph area. This cliff face is less than 150 yards from the proposed cycle trail, and is unusually vulnerable to future visitor intrusion; in fact, these petroglyphs have already become recent victims of some blatant vandalism. Encouraged access can only accelerate this decay.

In the second area, that west of Coliseum Gorge, the author concurs with the report's treachery of the presently-used route; he suggests that an early turnoff of the present road be made, preferably on the road that goes north a mile or so west of the Pacific Flourite Corp. Mill (AAA San Bernardino County Map being my source).

The area of the racecourse just west of the Basin Road interchange of I-15 presents potentially grave environmental damage. As mentioned in the report, there exists a number of early man encampments in this immediate area, strong traces of which exist in surface remnants immediately east of the flood-control embankment. Once again the problem of easy-access-causing-destruction presents itself; while double-flagging the race course on the opposite side of the wash may mitigate environmental damage by placing spectators on the opposite bank in this easily-accessible area, this is a weak, stopgap solution in attempting to preserve an archeological area untouched as yet by scientists and, as yet, by quite unscientific passers-by.

Lastly, an investigation was made of a rare distribution of Crucifixion Thorn in the north Cady Mountains. Field observation confirmed that while most of the species was fully mature (suggesting the eventual elimination of this type in this area of the Mojave), that the very few observed young plants were located quite close to the race course, making them vulnerable to either errant racers or to curious spectators wishing a new biological species for their collection. As well, other Indian sites in the area, discovered on the field reconnaissance, would be subject to probable vandalism.

Thus, it appears that from the few cited examples, and from the many other samples that must exist in other equally valuable and vulnerable areas, that the environmental value of running the race on any presently-planned route must be seriously questioned. Data in the recent publication give far more details of areas that are under environmental distress for other reasons than those mentioned above. The author appreciates greatly the effort and expense parlayed to generally expose the general environmental problems brought about by such an off-road race, and wishes to make the following suggestions in addition to those outlined in the draft:

1) the race should begin with a definite maximum number of riders -- if the race can be run in a more proper location -- not exceeding two thousand if possible.

2) the race should be started in many small increments, such as twenty per minute, fifty per three minutes, or other combination which will maximize the amount of daylight used for racing, in order to eliminate large packs of riders, these packs widening the swath at the expense of the plants in the area.

3) except on barren dry lake beds (such as Cronise Lakes), where passing should be encouraged, relatively bare spots should be flagged on both sides, to discourage trail cutting. Adequate enforcement personnel will be necessary here.

4) in the selection of alternative routes, present road alignments should be used wherever possible.

Thank you very much for your consideration of these suggestions and observations.

Sincerely,

Frank B. Norris

Frank B. Norris
Geographer,
Cartographic Division
Automobile Club of
Southern California
Los Angeles, California.

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Frank B. Norris, letter of October 9, 1974

Paragraphs 4, 5 and 6 refer to resource values in the Colosseum Gorge and Pachalka Spring areas. These resources are recognized. Alternatives are discussed in Section VIII of the final environmental impact statement which would route race participants around the Clark Mountain area through Keany Pass.

Paragraph 7 refers to the area just west of the Basin Road interchange. The response on this archaeological comment can be found in the response to the Eastvold letter.

Paragraph 8 - refer to response to Ike Eastvold's letter of 10/7/74.

Item 1, page 3 makes reference to the number of participants. Since there is no measure of a point of diminishing returns on rider numbers, an alternative number of riders has not been suggested to the sponsors.

Item 2, page 3 is a reference to the method of handling the start. The suggestion does not lend itself well to the handling of large numbers of participants.

Item 3, page 3 refers to excessive trail width. Attention is directed to section IV, Mitigating Measures, wherein specifications on course markings and marshaling are designed to accomplish the suggested goal.

Item 4, page 3 refers to road and trail alignment. All alternatives and the proposed action are aligned on previously used race trails and roads

UNIVERSITY OF CALIFORNIA, BERKELEY

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SANTA BARBARA • SANTA CRUZ

Reply to:
MUSEUM OF VERTEBRATE ZOOLOGY
2593 LIFE SCIENCES BUILDING
BERKELEY, CALIFORNIA 94720

October 1, 1974

To	Initial	Date
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Action By **3**
Return to

Mr. J. R. Penny, State Director
U. S. Department of the Interior
Bureau of Land Management
2800 Cottage Way, Room E-2841
Sacramento, California 95825

Dear Mr. Penny:

The BLM office in Riverside has provided me with a copy of the "Draft Environmental Impact Statement" for the proposed Barstow-Las Vegas motor cycle race. The statement is dated September, 1974. I was told by BLM personnel that comments on the draft were desired and that they would appreciate having any factual errors called to their attention. Since the statement is under your name I am sending my comments to you, with a copy of this letter to Mr. Del Vail in Riverside.

I am very impressed by this report. The desert planning staff is to be congratulated. I have only minor criticisms which I will present later. The statement documents well the environmental damage that has been caused by the Barstow-Las Vegas race and the potential for damage if the race becomes a traditional event. I think the impact statement is conservative in assessing present and future damage. If such races could be confined to agreed-upon routes acceptable to BLM, the non-ORV public, and the scientific community, one might be able to live with them. However, if participants insist upon new stretches of virgin terrain and refuse to respect race regulations, these events should be outlawed. Unfortunately, environmental damage does not stop between scheduled races. The track is used by other motorcyclists and it provides access to otherwise remote parts of the desert from which still other vehicle paths may radiate. With soil disturbance will come invasion of exotic plants. The spread of weeds in the desert will be accelerated.

Of the several alternatives to the proposed action, I support rejection of the application.

Mr. J. R. Penny, State Director

October 1, 1974

Comments on the Draft Statement

Part II, Description of the Environment. I would suggest deleting the great plains toad (Bufo cognatus) and the Great Basin spadefoot (Scaphiopus intermontanus). These amphibians may be in the area of the race course, but I do not believe their presence in this part of the desert has been documented by the collection of specimens. On page 106 the toad (an amphibian) is listed as a reptile.

In the tables in which species are listed, there is inconsistency in the use of common names. Official common names are now available for both species and subspecies of most vertebrates. When the scientific name of the subspecies is given, the common name used should be that for the subspecies. In some instances in the tables, the species common name is used instead.

Part III, Environmental Impacts of the Proposed Action, page 2, Particulate Matter. I feel that this discussion underestimates the effect of the race on suspended particulate matter within the air basins under consideration. The contribution to particulate matter may be negligible over the short interval of the race itself, but many miles of disturbed surface will yield particulate matter until the next substantial rain, which could be delayed for a year or more. The dust problem must be considered in this more comprehensive context.

Part III, Factors Related to Intensity of Impact on Vegetation and Wildlife, page 8, second paragraph. The report states, "Some areas, especially the Creosote Bush Communities, already show considerable disturbance, whereas others have had little impact." Some areas of the Creosote Bush Communities have actually been completely destroyed. "Considerable disturbance" is an understatement. I refer to the ORV assembly point near Barstow. Many acres of creosote bush desert have been completely denuded. If one looks closely the characteristic hummocks that form around perennial plant species can vaguely be seen, a ghost-like reminder of the plant community that formerly existed in the area.

Part III, page 23, last paragraph, in which the potential for recovery from damage to soils vegetation, and loss of animal populations is discussed. I would suggest a replacement for the third paragraph as follows: Ability for the habitat to recover depends on the potential for soils for compaction and the extent to which exotic plants become established in the area.

Mr. J. R. Penny, State Director

October 1, 1974

Part III, page 24, second paragraph from end: The mammals listed will not only decrease in population size due to effects on food supply and damage to habitat. The species listed are sensitive to man's presence. If the race becomes an annual affair and the track is used at other times by casual riders, these timid species may simply leave the vicinity. Driven from familiar terrane, their chances for survival in territory occupied elsewhere by established members of their species are not good.

Part IV, page 9, item 18: There is no way the permittee can abate damage to wildlife and vegetation.

Part V, page 7, second paragraph, Recovery of Vegetation: I agree that initial re-vegetation of disturbed areas is likely to be by exotic species. But if this happens, as expected, it may be impossible for the natural vegetation to come back. The wording seems to imply that following re-vegetation by exotics, the natural vegetation will in time return.

Part VI, page 2, first paragraph: "The use will directly and indirectly affect archaeological and historical values--nonrenewable cultural resources." This brings up the question of paleontological resources. The draft impact statement has given little attention to fossil sites which are also nonrenewable cultural resources. I understand the problems of the shortage of time, but I think it would be desirable to include at least a reference to the threat to such resources.

Part VII, page 1. Would it not be well to include an estimate of the fuel consumed by participants, spectators, and others involved in this race? I would guess that over 75,000 gallons of gasoline will be an irretrievable commitment of resources to this event.

In conclusion, if BLM decides in favor of the race, then I strongly urge that the eastern end of the route be changed. It should not be allowed in the biologically fragile Clark Mountain area where it will disturb rare Gila monster and puma habitat, threaten the integrity of Pachalka Spring, and risk damage to many rare plant species present in the area.

Sincerely,

Robert C. Stebbins

Robert C. Stebbins
Professor of Zoology

RCS:o'c

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Dr. Robert C. Stebbins, Prof. of Zoology, Museum of Vertebrate
Zoology, University of California, Berkeley letter of Oct. 1, 1974

The suggestions to delete the great plains toad and Great Basin spadefoot was accepted and the two species were deleted from Parts II and III, Appendix I, and Tables II-B-1, II-B-4, and III-B-2.

Common names of species were standardized according to Stebbins' 1966 Field Guide to Western Reptiles and Amphibians, The AOU Checklist of North American Birds (5th edition and a recent update), and the 1957 The Mammals of North America by Hall and Kelson. Common subspecies names for birds were taken from the 1944 publication by J. Grinnell and A.H. Miller entitled A Distribution of Birds in California.

The extent of disturbance to wildlife and wildlife habitat in Creosote Bush Communities is discussed in Part III under Specific Impacts on Wildlife Habitats, Creosote Bush Communities. Habitat losses of 80 to 100% in pits such as the Barstow start, were noted in the draft and final statements.

The recommendations of additions of phrases dealing with establishment of exotic plants and paragraphs of effects of off-road vehicles on certain mammal species were incorporated into the text.

The reference of abatement of damage to wildlife and vegetation in Part IV, page 9, item 18 is in the context of "as may be required by BLM."

The estimated generation of airborne particulate matter has been calculated by the Nevada Department of Public Health. Their figures show that amounts of particulate matter will exceed Nevada, California and Federal standards. Their calculations will be added to the final impact statement.

A discussion of paleontological resources has been added to the geology portion of the statement.

The estimate of fuel consumption is included in Section VII.

Two additional alternate routes that bypass Clark Mountain resources have been added to Section VIII of the final impact statement.

1208 Manzanita Dr.
Santa Paula, Calif. 93060
Oct. 7, 1974.

To	Initials	Date
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Return to _____

State Director,
Bureau of Land Management
2800 Cottage Way,
Sacramento, Calif. 95825

RECEIVED
BUREAU OF LAND MGMT
OCT 10 12 51 PM '74
CALIF. STATE OFFICE
SACRAMENTO, CALIF.

Dear Sir:

We strongly object to the Barstow - Las Vegas motorcycle race and any other cross-country motorcycle races of this nature. We object for two reasons:

First, the damage to the land, to the vegetation, to the wildlife and to the environment is irreparable. A brush fire sweeping the same area would be far less destructive. Although the motorcycle people are better organized to promote this type of destruction than the rest of us are to oppose it, you have the obligation to preserve the land and the environment for the people. Many of us truly love the desert. The motorcyclists and most of the ORV users merely want to destroy the desert with activities that should be confined to very limited areas or to the amusement parks.

Second, as long as there is talk of taxes or rationing to discourage consumption of gasoline, this type of activity should be prohibited. It is not transportation - it is a no better use of gasoline than were I to drive my car back and forth between here and Ventura (roughly 20 miles) at 80 or 90 miles per hour just because I like to drive fast. Although motorcycles can get 70 or 80 miles per gallon, it is doubtful if many do because they are "sopped up" with accessories to give them more speed and power. I expect I get better mileage with my VW. If 3000 motorcycles average 25 miles per gallon - in my opinion a generous figure for a motorcycle race - this race would require 18,000 gallons of gasoline. This is an incredible waste!

Please deny the permit for cross-country motorcycle races.

Sincerely,

Mr. & Mrs. Donald Teague

RECEIVED
BUREAU OF LAND MGMT
OCT 10 12 51 PM '74
CALIF. STATE OFFICE
SACRAMENTO, CALIF.

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: Mr. & Mrs. Donald Teague, letter of October 7, 1974

Estimates of gasoline consumption have been made and are included in Sections VII and XI of this report.

RESPONSE TO COMMENTS ON DRAFT AMENDMENT
TO THE FINAL ENVIRONMENTAL STATEMENT,
PROPOSED BARSTOW-LAS VEGAS MOTORCYCLE RACE
(INT DES 74-85)

Comments from: 26 Statements of Position

Letters stating a position regarding the proposed event were timely received from the following organizations and individuals.

Ahrens, James F.	Ralston, Kent
Arata, Nancy	Robinson, Larry
Burling, Barry L.	Rodine, Ed
Haley, Mr. B. R.	Sands, Anne & Pete
Henry, Mary Ann	Silcocks, Harry L.
Hesla, Otto S.	Williams, Amy
Johnson, Arthur B.	Williams, Mr. & Mrs. Chad L.
Lambert, John N.	Barstow Chamber of Commerce
Lederer, Roger J.	Barstow, City Council
Lovett, Leslie	California Native Plant Society
McConnell, J. R.	Mojave Valley Chamber of Commerce
Phillips, Mrs. Floyd H.	Natural History Museum, L.A. County
Phillips, Mickey	San Bernardino County Museum

The two attached letters are selected samples of the statements of position.



FROM THE DESK OF
LESLIE LOVETT

NHRA PHOTOGRAPHIC SERVICE
10639 RIVERSIDE DR., NO. HOLLYWOOD, CALIF.

CALIF. STATE
SACRAMENTO

PA

Dear Sir;

It has come to my attention that the BLM has not given a permit for the Barstow to Vegas Desert race sponsored by the San Gabriel MC. My self and my family have papticipated in this race for a number of years and we all look forward to this as the biggest event of the year and a family outing. Myself like all desert racers do not want to destroy the desert but only to use it as a means of receration, should this means of recreation be denied what are to do.

I would like you to reconsider the ~~the~~ value of the enjoyment for the familys ~~against~~ the alledged damage to the land, and issue the permit.

Sincerely

Leslie Lovett

RECEIVED
SEP 23 1 09 PM '68
CALIF. STATE DEPT.
SACRAMENTO, CALIF.

State Director
BLM
m. E-2841
880 Cottage Way
Sacramento, CA. 95825

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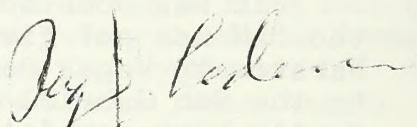
5 Oct 74

Dear Sir,

As a professional ecologist and concerned citizen, I find it very disturbing that your agency would even consider issuing a permit for a Barstow-Las Vegas motorcycle race. The damage that would be caused by this race would be incredible and would take many years to normalize, if it ever did. It is about time that the BLM realized that off-road-vehicle are the sport of only a small percentage of people and that their inconsiderate actions ruin recreational facilities for many many people for years to come. A few hours of fun by motorcyclists is not a fair trade for many years of recreationists who like to enjoy the outdoors without damaging it.

The BLM has a bad public image partly because of its lax attitude towards off-road-vehicle activity on its lands. Please look at this situation logically and take the side of reason; prevent the damage of open land by special interest groups at the expense of everyone else.

Sincerely,



Roger J. Lederer
1287 Howard Drive
Chico, CA 95926

X. REFERENCES

Geology and Minerals

- Byers, F.M. Jr. et. al. 1956. Trona Sheet, Geologic Map of California. Cal. Div. Mines and Geology.
- Clark, W.B. 1970. Gold Districts of California. Cal. Div. Mines and Geology Bull. 193: 156, 158.
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- Jenkins, O.P. et. al. 1953. Mines and Mineral Resources of San Bernardino County, California. Cal. J. Mines and Geology. 49(1,2):49-192.
- _____, 1948. Copper in California. Cal. Div. Mines and Geology Bull. 144; 297-319, and accompanying Economic Mineral Map of California No. 6.

Current resource information from flights over the area, and from Mr. Sam Italia, Mining Engineer, San Bernardino County Assessor's Office; Dr. Jean Juilland, Geologist for the Desert Planning Program Riverside District Mineral Resources Inventory.

Soils

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XI. APPENDICES

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ON THE CALIFORNIA DESERT

APPENDIX II-B-1

Reptiles and Amphibians along the Barstow to Las Vegas Race Course

AMPHIBIANS

Red-spotted Toad (Bufo punctatus)
Pacific Tree Frog (Hyla regilla)

REPTILES

Desert Tortoise (Gopherus agassizi)
Banded Gecko (Coleonyx variegatus)
Desert Night Lizard (Xantusia vigilis)
Chuckwalla (Sauromalus obesus)
Desert Iguana (Dipsosaurus dorsalis)
Zebra-tailed Lizard (Callisaurus draconoides)
Mojave Fringe-toed Lizard (Uma scoparia)
Collared Lizard (Crotaphytus collaris)
Leopard Lizard (Crotaphytus wislizenii)
Desert Spiny Lizard (Sceloporus magister)
Western Fence Lizard (Sceloporus occidentalis)
Long-tailed Brush Lizard (Urosaurus graciosus)
Side-blotched Lizard (Uta stansburiana)
Desert Horned Lizard (Phrynosoma platyrhinos)
Gilbert's Skink (Eumeces gilberti)
Western Whiptail (Cnemidophorus tigris)
Gila Monster (Heloderma suspectum)
Western Blind Snake (Leptotyphlops humilis)
Desert Rosy Boa (Lichanura trivirgata gracia)
Ringneck Snake (Diadophis punctatus)
Spotted Leaf-Nosed Snake (Phyllorhynchus decurtatus)
Coachwhip Snake (Masticophis flagellum)
Striped Whipsnake (Masticophis taeniatus)
Western Patch-nosed Snake (Salvadora hexalepis)
Gopher Snake (Pituophis melanoleucus)
Glossy Snake (Arizona elegans)
Common Kingsnake (Lampropeltis getulus)
Long-Nosed Snake (Rhinocheilus lecontei)
Western Ground Snake (Sonora semiannulata)
Western Shovel-Nosed Snake (Chionactis occipitalis)
Utah Black-Headed Snake (Tantilla planiceps utahensis)
Desert Night Snake (Hypsiglena torquata deserticola)
Sonora Lyre Snake (Trimorphodon lambda)
Sidewinder (Crotalus cerastes)
Speckled Rattlesnake (Crotalus mitchelli)
Mojave Rattlesnake (Crotalus scutulatus)

APPENDIX II-B-2

Birds and Their Status along the Barstow to Las Vegas Race Course

Status

- R - Resident - fixed in areal occurrence throughout the year
- SR - Summer Resident - species which is in residence and breeding in the spring and summer periods
- SV - Summer Visitant - species which is present but not so far as known in breeding residence
- WV - Winter Visitant - species present during intermigratory fall and/or winter periods
- M - Migrant - species seen during spring and fall migration periods
- V - Vagrant

<u>Common and Scientific Name</u>	<u>Status</u>
Turkey Vulture (<u>Cathartes aura</u>)	SR
Cooper Hawk (<u>Accipiter cooperii</u>)	WV
Sharp-shinned Hawk (<u>Accipiter straitus</u>)	WV
Red-tailed Hawk (<u>Buteo jamaicensis</u>)	R
Swainson Hawk (<u>Buteo swainsoni</u>)	SR
Zone-tailed Hawk (<u>Buteo albonotatus</u>)	rare visitor
Golden Eagle (<u>Aquila chrysaetos</u>)	R
Prairie Falcon (<u>Falco mexicanus</u>)	R
Peregrine Falcon (<u>Falco peregrinus</u>)	rare R
American Kestrel (<u>Falco sparverius</u>)	R
Gambel Quail (<u>Lophortyx gambelii</u>)	R
Chukar (<u>Alectoris chukar</u>)	R
Sora Rail (<u>Porzana carolina</u>)	WV, M
Killdeer (<u>Charadrius vociferus</u>)	SR
Mountain Plover (<u>Eupoda montana</u>)	WV
Solitary Sandpiper (<u>Tringa solitaria</u>)	WV
Common Snipe (<u>Capella gallinago</u>)	WV
Wilson Phalarope (<u>Steganopus tricolor</u>)	
California Gull (<u>Larus californicus</u>)	WV, T
Mourning Dove (<u>Zenaidura macroura</u>)	R
Roadrunner (<u>Geococcyx californianus</u>)	R
Flammulated Owl (<u>Otus flammeolus</u>)	SR
Mexican Screech Owl (<u>Otus asio cineraceus</u>)	R
Sahauro Screech Owl (<u>Otus asio gilmani</u>)	R
Great Horned Owl (<u>Bubo virginianus</u>)	R
Burrowing Owl (<u>Speotyto cunicularia</u>)	R
Long-Eared Owl (<u>Asio otus</u>)	R

Appendix II-B-2 (continued)

<u>Common and Scientific Name</u>	<u>Status</u>
Nuttall Poorwill (<u>Phalaenoptilus n. nuttallii</u>)	WV, SR
Desert Poorwill (<u>Phalaenoptilus nuttallii hueyi</u>)	R
White-throated Swift (<u>Aeronautes saxatilis</u>)	R
Costa Hummingbird (<u>Calypte costae</u>)	SR
Anna Hummingbird (<u>Calypte anna</u>)	R
Broad-tailed Hummingbird (<u>Selasphorus platycercus</u>)	SR
Mearns Gilded Flicker (<u>Colaptes auratus</u>)	R
Lewis Woodpecker (<u>Asyndesmus lewis</u>)	R
Red-naped Yellow-bellied Sapsucker (<u>Sphyrapicus varius nuchalis</u>)	WR
White-breasted Hairy Woodpecker (<u>Dendrocopos villosus leucothorectis</u>)	R
Cactus Ladder-backed Woodpecker (<u>Dendrocopos scalaris cactophilus</u>)	R
Western Kingbird (<u>Tyrannus verticalis</u>)	SR
Ash-throated Flycatcher (<u>Myiarchus cinerascens</u>)	SR
Cassin Kingbird (<u>Tyrannus vociferans</u>)	SR
Say Phoebe (<u>Sayornis saya</u>)	SR
Willow Flycatcher (<u>Empidonax traillii</u>)	
Wright Flycatcher (<u>Empidonax wrightii</u>)	Spring T
Gray Flycatcher (<u>Empidonax griseus</u>)	WV
Western Wood Peewee (<u>Contopus sordidulus</u>)	M
Desert & Salt Lake Horned Lark (<u>Eremophila alpestris leucolaema</u> <u>E. a. utahensis</u>)	WV
Mojave & Yuma Horned Lark (<u>E. alpestris ammophila</u> , <u>E. a.</u> <u>leucansiptila</u>)	R
Tree Swallow (<u>Iridoprocne bicolor</u>)	M
Violet Green Swallow (<u>Tachycineta thalassina</u>)	R
Scrub Jay (<u>Aphelocoma coerulesens</u>)	R
Common Raven (<u>Corvus corax</u>)	R
Pinyon Jay (<u>Gymnorhinus cyanocephalus</u>)	R
Inyo Mountain Chickadee (<u>Parus gambeli inyoensis</u>)	R
Gray Plain Titmouse (<u>Parus inornatus ridgwayi</u>)	R
Verdin (<u>Auriparus flaviceps</u>)	R
Providence Mountains Bushtit (<u>Psaltiparus minimus providentialis</u>)	R
Red-breasted Nuthatch (<u>Sitta canadensis</u>)	WV
Desert Bewick Wren (<u>Thryomanes bewickii eremophilus</u>)	R
Dotted Canyon Wren (<u>Catherpes mexicanus conspersus</u>)	R
Northern Rock Wren (<u>Salpinctes obsoletus obsoletes</u>)	R
Mockingbird (<u>Mimus polyglottos</u>)	R
Sage Thrasher (<u>Oreoscoptes montanus</u>)	WV
Bendire Thrasher (<u>Toxostoma bendirei</u>)	SR
Le Conte Thrasher (<u>Toxostoma lecontei</u>)	R
Crissal Thrasher (<u>Toxostoma dorsale</u>)	R
Alaska Hermit Thrush (<u>Hylocichla guttata guttata</u>)	WV
Great Basin Hermit Thrush (<u>Catharus guttatus polionot</u>)	SR
Rocky Mountain Swainson Thrush (<u>Catharus ustulatus almae</u>)	SR

Appendix II-B-2 (continued)

<u>Common and Scientific Name</u>	<u>Status</u>
Western Mexican Bluebird (<u>Sialia mexicana occidentalis</u>)	SR
Chestnut-backed Mexican Bluebird (<u>Sialia mexicana bairdi</u>)	SR
Mountain Bluebird (<u>Sialia currucoides</u>)	SR, WV
Townsend Solitair (<u>Myadestes townsendi</u>)	SR, WV
Western Blue-gray Gnatcatcher (<u>Polioptila caerula amoenissima</u>)	SR
Sonora Black-tailed Gnatcatcher (<u>Polioptila melanura lucida</u>)	R
Western Ruby-crowned Kinglet (<u>Regulus calendula cinerascens</u>)	SR, WV
Western Water Pipit (<u>Anthus spinoletta pacificus</u>)	WV
Phainopepla (<u>Phainopepla nitens</u>)	R
Loggerhead Sharke (<u>Lanius ludovicianus</u>)	R
Bell Vireo (<u>Vireo belli</u>)	SR
Gray Vireo (<u>Vireo vicinior</u>)	SR
Rocky Mt. Orange-crowned Warbler (<u>Vermivora celata orestera</u>)	WV
Virginia Warbler (<u>Vermivora virginiae</u>)	rare SR
Audubon Warbler (<u>Dendroica coronata auduboni</u>)	WV
Western Tanager (<u>Piranga ludoviciana</u>)	SR
Hooded Oriole (<u>Icterus cucullatus</u>)	SR
Scott's Oriole (<u>Icterus parisorum</u>)	SR
Bullock Oriole (<u>Icterus galbula bullockii</u>)	SR
Rocky Mt. Black-headed Grosbeak (<u>Pheucticus m. melanocephalus</u>)	SR
Lazuli Bunting (<u>Passerina amoena</u>)	SR
House Finch (<u>Carpodacus mexicanus</u>)	R
N. Pine Siskin (<u>Spinus pinus</u>)	R
Lesser Goldfinch (<u>Spinus psaltria</u>)	R
Sierra Red Crossbill (<u>Loxia curvirostra grinnelli</u>)	R
Green-tailed Towhee (<u>Chlorura chlorura</u>)	SR
Rufous-sided Towhee (<u>Pipilo erythrophthalmus</u>)	R
Desert Black-throated Sparrow (<u>Amphispiza bilineata deserticola</u>)	SR
Nevada Bell Sparrow (<u>Amphispiza belli nevadensis</u>)	WV
Slate-colored Junco (<u>Junco hyemalis hyemalis</u>)	WV
Oregon Junco (<u>Junco hyemalis oregonus</u>)	WV
Northern Gray-headed Junco (<u>Junco c. caniceps</u>)	SR
Southern Brewer Sparrow (<u>Spizella b. breweri</u>)	WV
Black-chinned Sparrow (<u>Spizella atrogularis</u>)	SR
Mountain Song Sparrow (<u>Melospiza melodia montana</u>)	WV
San Diego Song Sparrow (<u>Melospiza melodia cooperi</u>)	R

APPENDIX II-B-3

Rare Plant Species

Plant species are considered rare if individual plants are occasional over a wide range or if individual plants occur in concentrations but in a limited area (Wiley, 1969). Rare plants were placed in three categories:

Rare	Species identified as rare by Munz and/or the California Native Plant Society, and occurring in the study area.
Locally Rare	Species occurring in the study area which are considered rare in California, although they may be widely distributed outside the state and country.
Expected Rare	Includes species which may fit either of the first two categories. According to a literature search, plants in this category are not known to occur in the study area. However, they are found in similar habitats nearby. Therefore, the probability of their occurrence in the study area is high.

There are 11 known species representing 7 plant families in the rare category, 31 species representing 17 families in the locally rare category, and 36 species representing 23 plant families in the expected rare category. Plant species are listed by family and a brief description of distribution and habitat is given. References used in determining rarity of listed species were Munz (1959), McMinn (1970), Jaeger (1969), and California Native Plant Society (1973).

RARE PLANTS

Cactaceae (Cactus family)

Alverson Cactus, Mammillaria alversonii

Stony slopes, 2,000 to 5,000', Joshua Tree Woodland, Creosote Bush Scrub.

Little San Bernardino Mountains to Eagle and Chuckwalla Mountains
California Nature Plant Society list of rare plants.

Devil's Cactus, Opuntia parishii

Creosote Bush Scrub and Joshua Tree Woodland

3,000 to 5,000' elevation on dry flats. Known from the Little San Bernardino Mountains to Clark Mountain of California and in western Nevada.

Celastraceae (Staff-tree family)

Low Grease Bush, Forsellesia pungens glabra

Pinyon-Juniper Woodland

5,500 to 6,500' elevation on limestone cliffs.

Known only from Clark Mountain of California.

Spiny Tipped Tongue Flower, Forsellesia pungens

Pinyon-Juniper Woodland

5,500 to 6,500' elevation on limestone cliffs.

Known only from Clark Mountain of California.

Compositae (Sunflower family)

Exalted Laphamia, Laphamia fastigiata

Known only from the Sheep Mountains of Nevada and arid ranges about Death Valley.

Horse Brush, Tetradymia argyraea

Pinyon-Juniper Woodland

5,000 to 7,000' elevation on dry, rocky slopes.

Known only from Clark and Kingston Mountains of California.

Hydrophyllaceae (Waterleaf family)

Barnaby's Phacelia, Phacelia barnabyana

Pinyon-Juniper Woodland

5,000 to 8,000' elevation. Reported only from Clark Mountain and the Inyo Mountains of California.

Leguminosae (Pea family)

Lax Flowered Locoweed, Astragalus nutans

Creosote Bush Scrub, Joshua Tree Woodland and Pinyon-Juniper Woodland

1,500 to 6,400' elevation on hills and in washes.

Known from Clark, New York, Providence, Old Dad, and Chuckawalla Mountains of California.

Mojave Indigo Bush, Dalea arborescens

Creosote Bush Scrub

2,000 to 2,600' elevation on low hills and mesas localized near Barstow and Daggett, California.

Polemoniaceae (Phlox family)

Sand Linanthus, Linanthus arenicola

Joshua Tree Woodland

2,500 to 4,000' elevation. Barstow, Kelso, Searles Valley, and Ubehebe Crater in California and from Nipton, Nevada.

Rosaceae (Rose family)

Jaeger's Ivesia, Ivesia jaegeri

Pinyon-Juniper Woodland

7,500' elevation in limestone crevices. Known from Clark Mountain in California and the Charleston Mountains of Nevada.

LOCALLY RARE

Amaryllidaceae (Amaryllis family)

Small-flowered Androstephium, Androstephium breviflorum
Creosote Bush Scrub
Below 5,000' on dry slopes and plains. Supposedly eastern
California to western Colorado.

Celastraceae (Staff-tree family)

Utah Mortonia, Mortonia utahensis
Joshua Tree Woodland
3,400 to 5,500' elevation on limestone sites. Known from Clark,
Kingston, and Panamint Mountains of California and to Utah and
Arizona.

Compositae (Sunflower family)

New Mexico Bahia, Bahia neomexicana
Pinyon-Juniper Woodland
5,000 to 5,500' elevation on sandy slopes and washes. Known
from Clark Mountain in California and east to Colorado.

Long-flowered Rabbit-brush, Chrysothamnus depressus
Joshua Tree Woodland and Pinyon-Juniper Woodland
3,500 to 6,000' elevation in dry canyons. Known from Clark,
New York, and Providence Mountains of California, extending to
southern Colorado and northern New Mexico.

Desert Eupatorium, Eupatorium herbaceum
Pinyon-Juniper Woodland
5,000 to 6,400' elevation, among rocks. Known from Clark and
New York Mountains of California and east to Utah and New Mexico.

Slender Goldenbush, Haplopappus gracilis
Creosote Bush Scrub to Joshua Tree Woodland
Below 5,000' elevation on sandy or rocky flats and hillsides.
Known from Clark and Providence Mountains of California and east
and south to Colorado, Texas, and Mexico.

Turpentine Brush, Haplopappus laricifolius
Creosote Bush Scrub to Pinyon-Juniper Woodland
3,500 to 6,500' elevation on rocky slopes and mesas. Known from
Clark, New York, and Hackberry Mountains of California and east
and south to Texas and Mexico.

Columbia Cut-leaf, Hymenopappus filifolius eriopodus
Pinyon-Juniper Woodland
4,900 to 7,000' elevation on dry limestone slopes. Known from
Clark and New York Mountains in California and east to south-
western Utah.

LOCALLY RARE

Rock Goldenrod, Petradoria pumila

Pinyon-Juniper Woodland

3,500 to 7,000' elevation on dry, stony limestone slopes. Known from Clark, New York, and Providence Mountains of California and eastward to Wyoming and Texas.

Coulter Psilactis, Psilactis coulteri

Creosote Bush Scrub and Alkali Sink

300 to 3,000' elevation on dry, open sand and playa margins.

Known from Inyo County south to the Whipple Mountains in California and to southern Nevada, southern Arizona, and Sonora, Mexico.

Abert's Sanvitalia, Sanvitalia abertii

Pinyon-Juniper Woodland

5,400' on rocky slopes and dry washes. Known from Clark Mountains in California and east and south to Arizona, Texas, Chihuahua, Mexico, and Sonora, Mexico.

Cruciferae (Mustard family)

Mountain Pepper-Grass, Lepidium montanum cinereum

Creosote Bush Scrub to Pinyon-Juniper Woodland

2,600 to 5,000' elevation, on dry alkali sites. New York Mountains and Mesquite Valley to northwestern Arizona.

Euphorbiaceae (Spurge family)

Spurge, Euphorbia revoluta

Creosote Bush Scrub

4,000' elevation, north slope of Clark Mountain. Also to Colorado, New Mexico, and Chihuahua, Mexico.

Gramineae (Grass family)

Salina Wild Rye, Elymus salinus

Pinyon-Juniper Woodland

4,500 to 6,500' elevation on rocky slopes. Known from Clark, Providence, and New York Mountains of California, distributed to Idaho, Wyoming, and Colorado.

Spike Pappus grass, Enneapogon desvauxii

Pinyon-Juniper Woodland

5,000 to 6,000' elevation on dry limestone slopes. Known only from Clark Mountains in California, distributed eastward to Utah and Texas, southward to Mexico and South America.

LOCALLY RARE

Arizona Fescue, Festuca arizonica

Pinyon-Juniper Woodland

5,500' elevation on dry slopes. Known only from Clark Mountains in California and from Arizona to Colorado and Texas.

Muhly, Muhlenbergia arsenei

Pinyon-Juniper Woodland

5,000 to 6,000' elevation on dry limestone slopes. Known only from Clark Mountains in California, distributed to Utah and New Mexico.

Dry-Land Needlegrass, Stipa arida

Pinyon-Juniper Woodland

4,000 to 5,700' elevation on dry limestone slopes. Known from Clark and Funeral Mountains of California and eastward to Colorado and Texas.

Fluff Grass, Tridens pilosus

Pinyon-Juniper Woodland

5,000 to 6,000' elevation on dry slopes. Known from Clark Mountains and the Mescal Range in California and eastward to Kansas and Texas.

Hydrophyllaceae (Waterleaf family)

Aven Nelson's Phacelia, Phacelia anelsoni

Pinyon-Juniper Woodland and Joshua Tree Woodland

4,000 to 5,500' elevation on dry sites. Eastern Inyo and San Bernardino Counties to Nevada and Utah.

Gooding's Phacelia, Phacelia pulchella goodingii

Creosote Bush Scrub, on Alkali Flats. Mesquite Valley and eastern Inyo County in California. Also Nevada and northwestern Arizona.

Leguminosae (Pea family)

Preuss' Locoweed, Astragalus Preussii

Shadescale Scrub and Alkali Sinks

2,500 to 2,600' elevation on barren clay cliffs. Known from Kingston Range and Mesquite Valley in California, ranges eastward through southern Nevada, southern Utah, and northern Arizona.

Onagraceae (Evening Primrose family)

Caespitose Evening Primrose, Oenothera caespitosa crinita

Pinyon-Juniper Woodland and Bristle-Cone Pine Forest

7,500 to 10,000' elevation in dry, rocky crevices. Known from Clark and Panamint Mountains of California and eastward to Utah.

LOCALLY RARE

Polygonaceae (Buckwheat family)

Heerman's Eriogonum, Eriogonum heermannii sulcatum

Pinyon-Juniper Woodland

6,300 to 6,800'. Kingston and Clark Mountains in California to Utah and Arizona.

Portulacaceae (Purslane family)

Purslane, Portulaca mundula

Joshua Tree Woodland

3,700' elevation in sandy washes. Valley Wells in California, also Arizona to Missouri and Mexico.

Pteridaceae (Fern family)

Cochise Lip-Fern, Cheilanthes sinuata cochinsensis

Joshua Tree and Pinyon-Juniper Woodland

3,200 to 5,500' elevation. Known from the Providence and Clark Mountains of California. Also reported from Arizona and northern Mexico.

Rubiaceae (Madder family)

Rothrock's Bedstraw, Galium wrightii rothrockii

Pinyon-Juniper Woodland

5,000 to 6,000' elevation on dry, rock sites. Mountains of east Mojave and into Arizona and New Mexico.

Saxifragaceae (Saxifrage family)

Yerba Desierto, Fendlerella utahensis

Pinyon-Juniper Woodland

5,500 to 6,500' elevation on dry limestone slopes. Known from Clark and Inyo Mountains of California and eastward to Nevada, Utah, Arizona, New Mexico, and Texas.

Scrophulariaceae (Figwort family)

Thompson's Penstemon, Penstemon thompsonae

Pinyon-Juniper Woodland

6,000' elevation on dry, limestone slopes. Reported from Clark Mountains in California to southeastern Utah and northern Arizona.

LOCALLY RARE

Solanaceae (Nightshade family)

Fendler Ground Cherry, Physalis Fendleri

Creosote Bush Scrub to Pinyon-Juniper Woodland

3,200 to 5,500' elevation on dry, rocky, gravelly sites. Known from Clark, Providence, and New York Mountains of California and east to Colorado and New Mexico.

Verbenaceae (Verbena family)

Gooding Verbena, Verbena goodingii

Joshua Tree Woodland and Pinyon-Juniper Woodland

4,000 to 6,500' elevation on dry canyons and slopes. Known from Prividence, New York, Clark, and Ivanpah Mountains of California and to Utah and Sonora, Mexico.

EXPECTED RARE PLANTS

Aizoaceae (Carpet Weed family)

Lowland Purslane, Trianthema portulacastrum
Alkali Sink. Occasional in lowland sinks from Yermo, California,
to Texas.

Aspidiaceae (Fern family)

Oregon Woodsia, Woodsia oregana
Pinyon-Juniper Woodland, Yellow Pine Forest to Sub-Alpine Forest
4,000 to 11,000' elevation on dry, rocky sites. Reported from
Santa Rosa, San Jacinto, and Sierra Nevadas north to British
Columbia and South Dakota and east to New Mexico.

Boraginaceae (Borage family)

Pinyon Forget-me-not, Crytantha tumulosa
Pinyon-Juniper Woodland
4,500 to 6,000' elevation on dry, rocky limestone sites. Known
from Providence, New York, and Ivanpah Mountains of California
and the Charleston Mountains of Nevada.

Cactaceae (Cactus family)

Beaver Tail, Opuntia basilaris brachyclada
Joshua Tree Woodland
4,000 to 7,500' elevation on dry slopes. Known from San Gabriel,
San Bernardino, and Providence Mountains of California.

Caryophyllaceae (Pink family)

Capitate Sandwort, Arenaria congesta charlestonensis
Pinyon-Juniper Woodland
7,000' elevation on sandy ridges. New York Mountains and
southern Nevada.

Compositae (Sunflower family)

Knapp's Brickel-bush, Brickellia knappiana
Joshua Tree Woodland
2,500 to 3,500'. Known only from the Panamint Mountains and
along the Mojave River of California.

Utah Daisy, Erigeron utahensis
Joshua Tree Woodland
5,000' elevation on dry limestone slopes. Known from Providence
Mountains of California and east to Nevada, Utah, and south-
western Colorado.

EXPECTED RARE PLANTS

Mojave Eriophyllum, Eriophyllum mohavense

Creosote Bush Scrub

2,000 to 3,000' elevation on sandy or rocky sites. Known only from within 30 miles of Barstow, California.

Crassulaceae (Stonecrop family)

Large Flowered Dudleya, Dudleya saxosa aloides

Creosote Bush Scrub to Pinyon-Juniper Woodland

800 to 5,500' elevation on dry rocky places. Known from desert mountain ranges of San Bernardino County.

Cruciferae (Mustard family)

Whitlow Grass, Draba cuneifolia

Pinyon-Juniper Woodland

5,000 to 6,000' in moist, sandy sites. New York Mountains in California southeast to Texas.

Thurber's Pepper-Grass, Lepidium thurberi

Reported only from Barstow in southern California, also reported from Sonoma County, California, and in New Mexico and Arizona.

Ephedraceae (Ephedra family)

Desert Tea, Ephedra funerea

Creosote Bush Scrub

2,000 to 5,000' elevation. Known from Death Valley Region in California and in southwestern Nevada.

Fagaceae (Beech family)

Oak, Quercus turbinella

Pinyon-Juniper Woodland

4,000 to 6,000' elevation. Known from New York Mountains in California and east to southern Nevada, to Texas, and south to northern Baja California.

Gramineae (Grass family)

Fendler Three-Awn, Aristida fendleriana

Pinyon-Juniper Woodland

4,000 to 6,000' elevation on dry slopes. Known from Santa Rosa and New York Mountains of California, distributed to North Dakota, Montana, Texas, and Mexico.

EXPECTED RARE PLANTS

Alkali Grass, Puccinellia parishii

Joshua Tree Woodland

2,900' elevation in alkaline seeps. Known only from Rabbit Springs, western Mojave Desert in California, and near Tuba City, Arizona.

Hydrophyllaceae (Waterleaf family)

Yerba Santa, Eriodictyon angustifolium

Pinyon-Juniper Woodland

5,000 to 5,500' elevation on dry slopes. Reported from New York Mountains in California to Utah and Arizona.

Phacelia, Phacelia mustelina

Creosote Bush Scrub

3,000 to 6,000' on rocky limestone sites. Known from limestone areas in mountains about Death Valley.

Labiatae (Mint family)

Plains Lemon Monarda, Monarda pectinata

Joshua Tree Woodland to Pinyon-Juniper Woodland

4,000 to 5,000' elevation on dry slopes. Known from the New York Mountains in California and east and south to Nebraska and Texas.

Purple Sage, Salvia funerea

1,000 to 3,000' elevation in dry washes and rocky sites. Known from the west slope of the Amargosa Range, the Panamint and Grapevine Mountains of California.

Leguminosae (Pea family)

Cima Locoweed, Astragalus cimae

Joshua Tree Woodland and Sagebrush Scrub

4,700 to 6,000' elevation on calcareous soils of mesas and stony hillsides. Known only from the New York Mountains and Mid Hills of California.

Prairie Clover, Petalostemon searlsiae

Pinyon-Juniper Woodland

5,000 to 7,000', dry, gravelly, stony banks. Known from New York and Providence Mountains to Utah and Arizona.

Liliaceae (Lily family)

Alkali Star Tulip, Calochortus striatus

Creosote Bush Scrub

2,500 to 4,300' elevation in alkaline meadows and seeps. Known from San Bernardino and San Gabriel Mountains of California eastward to Las Vegas, Nevada.

EXPECTED RARE PLANTS

Malvaceae (Mallow family)

Indian Mallow, Abutilon parvulum

Shadescale Scrub

3,000 to 4,000' elevation on arid, rocky slopes. Known from Providence Mountains of California east to Colorado, Arizona, and Mexico.

Nyctaginaceae (Four-O'Clock family)

Umbrella Wort, Oxybaphus comatus

Pinyon-Juniper Woodland on dry slopes.

Ivanpah Mountains in California and Nevada to Texas and Mexico.

Onagraceae (Evening primrose family)

Evening Primrose, Oenothera cavernae

Creosote Bush Scrub

1,500 to 4,000' elevation on limestone sites. Known from western Clark County, Nevada.

Clute's Evening Primrose, Oenothera longissima clutei

Creosote Bush Scrub to Pinyon-Juniper Woodland

3,400 to 5,500' elevation on moist sites. Known from Providence and New York Mountains of California and from Utah and Arizona.

Garrett's California Fuchsia, Zauschneria garrettii

Pinyon-Juniper Woodland

5,500' elevation on dry, rocky sites. Known from the Kingston Mountains in California and eastward to Utah and Wyoming.

Papaveraceae (Poppy family)

Desert Poppy, Arctomecon merriami

Creosote Bush Scrub

3,000 to 4,500' elevation on loose, rocky slopes. Death Valley Region to Clark County, Nevada.

Rosaceae (Rose family)

Cinquefoil (Five Finger), Potentilla patellifera

Pinyon-Juniper Woodland

5,500 to 6,500' elevation in crevices of rocks. Known only from Kingston Mountains of California.

EXPECTED RARE PLANTS

Rubiaceae (Madder family)

Desert Bedstraw, Galium proliferum
Creosote Bush Scrub to Joshua Tree Woodland
3,500 to 4,000' elevation on dry limestone cliffs. Known from Kingston and Providence Mountains of California eastward to Texas and southward to northern Mexico.

Scrophulariaceae (Figwort family)

Purple Bird's-Beak, Cordylanthus parviflorus
Pinyon-Juniper Woodland
4,000 to 5,700' elevation on dry, rocky limestone sites. Known from the New York Mountains in California and east to Utah and Arizona.

Violet Twining Snapdragon, Maurandya antirrhiniflora
Shadescale Scrub to Joshua Tree Woodland
2,500 to 4,000' elevation on limestone sites. Known from the Providence Range in California and southeast to Texas and Mexico.

Lime Penstemon, Penstemon calcareus
Creosote Bush Scrub to Pinyon-Juniper Woodland
3,500 to 6,000' in dry crevices in limestone. Reported from Providence and Grapevine Mountains of California.

Amargosa Penstemon, Penstemon fructiformis amargosae
Dry rocky slopes. Kingston Mountains in California and in western Nevada.

Stephen's Penstemon, Penstemon stephensii
Creosote Bush and Shadescale Scrub
5,000 to 6,000' elevation on rocky slopes. Kingston and Providence Mountains of California.

Selaginellaceae (Spike-moss family)

Mojave Selaginella, Selaginella leucobryoides
Shadescale Scrub to Pinyon-Juniper Woodland
2,000 to 7,500' elevation in rock crevices and on slopes.
Reported from the Panamint and Providence Ranges.

Appendix II-B-4

Mammals existing over the Barstow - Las Vegas "Race Course"

Crawford's Desert Shrew (Notiosorex crawfordi)
California Leaf-nosed Bat (Macrotus californicus)
Little Brown myotis (Myotis lucifugus)
Yuma myotis (Myotis yumanensis)
Long-eared myotis (Myotis evotis)
Fringed myotis (Myotis thysanodes)
Long-legged myotis (Myotis volans)
California myotis (Myotis californicus)
Small-footed myotis (Myotis subulatus)
Silver-haired Bat (Lasionycteris noctivagans)
Western Pipistrelle (Pipistrellus hesperus)
Big Brown Bat (Eptesicus fuscus)
Red Bat (Lasiurus borealis)
Hoary Bat (Lasiurus cinereus)
Spotted Bat (Euderma maculatum)
Townsend's Big-eared Bat (Corynorhinus townsendii)
Pallid Bat (Antrozous pallidus)
Brazilian Free-tailed Bat (Tadarida brasiliensis)
Big Free-trailed Bat (Tadarida molossa)

Desert Cottontail (Sylvilagus audubonii)
Black-tailed Jackrabbit (Lepus californicus)
Panamint Chipmunk (Eutamias panamintinus)
White-tailed Antelope Ground Squirrel (Ammospermophilus leucurus)
Rock Squirrel (Spermophilus variegatus)
Round-Tailed Ground Squirrel (Spermophilus tereticaudus)
Southern Pocket Gopher (Thomomys bottae)
Little Pocket Mouse (Perognathus longimembris)
Great Basin Pocket Mouse (Perognathus parvus)
Long-tailed Pocket Mouse (Perognathus formosus)
Desert Pocket Mouse (Perognathus penicillatus)
Chisel-toothed Kangaroo Rat (Dipodomys microps)
Merriam's Kangaroo Rat (Dipodomys merriami)
Desert Kangaroo Rat (Dipodomys deserti)
Panamint Kangaroo Rat (Dipodomys panamintinus)
Western Harvest Mouse (Reithrodontomys megalotis)
Canyon Mouse (Peromyscus crinitus)
Cactus Mouse (Peromyscus eremicus)
Brush Mouse (Peromyscus boylii)
Pinyon Mouse (Peromyscus truei)
Southern Grasshopper Mouse (Onychomys torridus)

Appendix II-B-4 (cont'd)

Desert Woodrat (Neotoma lepida)
Porcupine (Erethizon dorsatum)
Coyote (Canis latrans)
Kit Fox (Vulpes macrotis)
Gray Fox (Urocyon cinereoargenteus)
Ringtail Cat (Bassariscus astutus)
Raccoon (Procyon lotor)
Long-tailed Weasel (Mustela frenata)
Badger (Taxidea taxus)
Western Spotted Skunk (Spilogale putorius)
Mountain Lion (Felis concolor)
Bobcat (Lynx rufus)
Mule Deer (Odocoileus hemionus)
Bighorn Sheep (Ovis canadensis nelsoni)
Burro (Equus asinus)

Appendix III-C-1

QUALITY EVALUATION CHART
SCENERY

KEY FACTORS	RATING CRITERIA AND SCORE		
LAND FORM	Vertical or near vertical cliffs, spires, highly eroded formations, massive rock outcrops, severe surface variation.	Steep canyon walls, mesas, interesting erosional patterns, variety in size & shape of land forms.	Rolling hills, foothills, flat valley bottoms.
COLOR	Rich color combinations variety of vivid contrasts in the color of soil, rocks, vegetation or water	Some variety in colors and contrast of the soil, rocks & vegetation, but not dominant.	Subtle color variations, little contrast, generally muted tones. Nothing really eye-catching.
WATER	Still, chance for reflections or cascading white water, dominant factor in the the landscape.	Moving and in view or still but not dominant.	Absent or present but seldom seen.
VEGETATION	A harmonious variation in form, texture, pattern, and type.	Some variation in pattern and texture, but only one or two major types.	Little or no variation, contrast lacking.
UNIQUENESS	One of a kind or very rare within region.	Unusual but similar to others within the region.	Interesting in its setting, but fairly common within the region.
INTRUSIONS	Free from aesthetically undesirable or discordant sights and influences.	Scenic quality is somewhat depreciated by inharmonious intrusions but not so extensive that the scenic qualities are entirely negated.	Intrusions are so extensive that scenic qualities are for the most part nullified.

A= 15-24

B= 10-14

C= 1-9

APPENDIX VII-1

Estimated Motorcycle Racer Gasoline Consumption

	<u>Number Vehicles</u>	<u>Miles to Next Stop</u>	<u>Motorcycle-Miles</u>
Start	3,000	40	120,000
Stop 1	2,000	40	80,000
Stop 2	1,650	40	66,000
Stop 3	1,300	40	52,000
Finish	1,300	--	-----
		160	318,000

$318,000 \div 25^* = 12,720$ gallons gasoline consumed

 * Est. 25 miles per gal. per motorcycle mileage.

APPENDIX VII-2

Estimated Spectator & Support Vehicle* Gasoline Consumption

12,000 Spectators & Support Personnel Expected

Estimated 4 people per vehicle

$12,000 \div 4 = 3,000$ Vehicles

<u>No. of Vehicles</u>	<u>Miles Traveled Per Vehicle</u>	<u>Total Spectator & Support Vehicle Miles</u>
3,000	300 (Los Angeles to race start & return L.A.)	900,000
2,000	300 (Start to finish & return to start)	600,000
		1,500,000

$1,500,000 \div 10^{**} = 150,000$ Gallons Gas Consumed

 * 4-wheel vehicles, such as pickups, jeeps, vans, sedans, etc.

** Estimated 10 miles per gallon of gasoline consumption per vehicle.

APPENDIX VII-3

Estimated Joyrider Gasoline Consumption

Expected Joyriders = 6,000

Expected Miles Ridden per Joyrider = 30

$6,000 \times 30 = 180,000$ Joyrider Miles

$180,000 \div 40^* \text{ miles per gallon} = 4,500 \text{ Gallons Gasoline}$

* Estimated 40 miles per gallon mileage.

APPENDIX VII-4

Total Gasoline Consumption, Barstow-Las Vegas Race

Motorcyclist Racers = 12,720 Gallons

Spectators & Support = 150,000 Gallons

Joyriders = 4,500 Gallons

Total = 167,220 Gallons Gasoline Consumed

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I-A-1

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